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THE MILITIA IN 1897.

By Lieut.-Colonel Lord RAGLAN (Captain Grenadier Guards, retired pay), Royal Monmouthshire Engineer Militia.

Wednesday, February 10th, 1897.

General Sir RICHARD HARRISON, K.C.B., C.M.G., R.E.,
in the Chair.

The CHAIRMAN:—My lords, ladies, and gentlemen, It is hardly necessary for me to say much in the way of introduction of one who bears such an historic name as Lord Raglan. There must be many in this room who will remember the circumstances of the Crimean war, how the First Lord Raglan, the friend of Wellington, having learnt the art of war in the Peninsula and at Waterloo, was entrusted, though somewhat advanced in years, with the command of the British Army that went to the East; how he succeeded in bringing honour to the British arms in the victories of Alma, of Inkerman, and of Balacava; and how, later on, though oppressed by the want of organisation in the British Army and the unpreparedness of our country for war, he continued to struggle against difficulties, until at last he laid down his life on the altar of duty within sight of those ever-memorable trenches around Sebastopol. Ladies and gentlemen, it is the grandson of that great man who has been kind enough to come here and address us to-day on the very important subject of the Militia. He, also, is a soldier of varied experience. He has served in the Grenadier Guards, has seen active service against the Afghans in the north of India, and he is now second in command of what I know to be one of the smartest and most efficient Militia regiments in Her Majesty's Service. I can confidently commend what he is about to say to the attention and consideration of all present.

LECTURE.

FOR many years the country has taken but little notice of the Militia, and the efficiency of those battalions that attended the last Aldershot Manœuvres came as a revelation to both Press and Public, and even, it is said, to many distinguished soldiers. This appears to be a favourable time at which to discuss the general condition of the Militia, the directions in which it could be improved, and the means that could be taken to increase its utility. I propose, therefore, briefly to call attention to certain wants of the Force, and to make a few suggestions with regard to them.

It is as one who has known and belonged to the Militia force for many years that I am here to submit these suggestions to your careful consideration and criticism; but it seems only right that I should also tell you that from personal enquiries which I have made, I feel justified in saying that the views I hold and here put forward are those held—not perhaps by all

—but by the great majority of those Militia officers who, from their experience and position, are best acquainted with the needs and requirements of the Force.

The first point is the deficiency of officers, which is a great and growing one. At this moment there are over 700 vacancies, and for several years they have been growing more numerous. The earlier returns do not distinguish the officers of the Permanent Staff, and apparently include the medical officers now abolished; so I take the last ten years, *i.e.*, 1886 to 1895 inclusive, and I find that, on an average of those years, there is a deficiency of about 500 officers; or, taking it the other way, that the average number of officers the country can provide under present conditions is very little more than 3,000.

Though it is only of late years that agricultural depression has almost deprived the Force of the services of the local landowners, we must remember that there has always existed more or less difficulty in officering the Militia. I cannot find any year since 1859 (the first year of the annual returns) in which there were less than 300 vacancies—speaking in round numbers—and the deficiency has lately been larger. Even during the old French wars the Militia was never complete in officers.

Let us turn for a moment to the classes of young men who can afford the time and money for entering the Militia. Last year an eminent Volunteer brigadier made a bitter attack on the leisured classes for their apathy and want of patriotism. Now I do not know where this large leisured class, apathetic and unpatriotic, is. In former days the land-owning classes might fairly have been called leisured, and they officered the Militia almost entirely. Nowadays, all younger sons and most elder ones enter a profession or emigrate, as soon as they leave school or college, and have no time to devote to soldiering. By the time they have reached a position of independence, they are too old to begin a new trade, which, above all others, requires to be learnt in youth. On the other hand, those few young men who really possess the requisite leisure and means almost invariably join the Militia, the Yeomanry, or the Volunteers, but their numbers are not sufficient to fill the vacancies. If anyone who hears me will write down the names of those young men he knows, between the ages of 17 and 23, who have a certain amount of leisure and money, and who are not wearing Her Majesty's livery in some branch of the Auxiliary forces, he will find the list a remarkably short one. There are only two large classes of young men with leisure and a fair income or allowance: those who are cramming for the Army, and those at the Universities. The latter are largely debarred from entering the Militia by the fact that the trainings fall, generally, in the summer term, and we cannot expect any number of University men in the Militia till the times of the terms are altered, or special arrangements made to suit their convenience; and that is a question we cannot discuss here.

There remain to my mind only the lads who are cramming for the Army. If all officers had to enter the Army through the Militia, the problem would be solved at once, and all vacant commissions, anyhow in the subaltern ranks, would be filled, even if the establishment were raised

to two subalterns per company; which it assuredly should be, to form a reliable reserve of officers for the Army.

I do not think the expense of entering the Army in this way would be greater than is incurred under present conditions, possibly not so great. Were all to enter through the Militia, and were the ranks of the latter filled up, the expense would be far less than it is now. At the present moment there are battalions with eight, ten, and even more vacancies, and either the expense must be enormous to the officers, or some must be attached from other regiments, who, however good they may be, cannot take the same interest in the regiment as if they belonged to it. The country has to pay for officers who do not exist, by this system of attaching strangers for the training; so that one officer may, and often does, attend two or three trainings every year, of course receiving pay and allowances every time; but not being capable of serving in two places at once, the effect if there was a general embodiment would be most serious. What would be the value as a military unit of a battalion with perhaps only two or three subalterns? Yet this is the case with many regiments; and according to the Army List of 1897, the Militia battalions of only two territorial regiments are complete in officers, and the condition of the Artillery is far worse.

The plan of making all officers join the Army through the Militia would have the following advantages:—

1. It would fill up the vacancies in the Militia.
2. The competitive examinations for both Woolwich and Sandhurst could be made almost entirely military.
3. A great number of young officers possessing a fair knowledge of drill, discipline, and interior economy, would be ready to join the Army whenever wanted.
4. The standard of military efficiency in the Militia could be raised by requiring all officers to receive more instruction on first joining.
5. The country would obtain valuable service from many hundreds of youths who now render none.
6. Even those young men who would be finally unsuccessful in their efforts to enter the Army, and who might then leave the Militia, would have the satisfaction of feeling that they have rendered some service to their country, if only in the Militia. At present they must feel that the years they have spent at a crammer's have been merely so much lost time, by which neither their country, nor themselves, nor any other human being, have benefited in the slightest degree.

I suggest that the age for a commission in the Militia be lowered to sixteen, that the age for Army examinations remain as at present, and that anyone be allowed to compete after one training with the Militia and four months' instructional drill. Successful candidates could serve the same periods at Sandhurst and Woolwich, on the same pay and on the same conditions as now obtain, but should be allowed to wear their Militia uniform. Those Militia officers who fail in the Army exam. should

be allowed to continue in the Militia, if they so desire, and all appointments of a military, or semi-military, nature in the Empire, should be reserved exclusively for them, except where they are given to Regular officers, who should be seconded in their regiments for five years, and at the end of that period would be called on to decide finally, whether to keep the colonial appointment, or return to the Militia. Applicants for Militia commissions, for whom there are no vacancies, should be appointed supernumeraries, but leave should be freely given to young officers who are just commencing their professional career in civil life, and the pay thus saved made over to the supernumerary officers.

Even if there are disadvantages in this proposal, when such a serious state of things—amounting to a national danger—arises as the present condition of the Militia commissioned ranks, no individual inconvenience should be allowed to override the interests of the Empire; and even should this plan deter some few young men from trying to enter the Army, the present huge competition renders this immaterial, and against this would be set the advantage of discouraging a number of youths from wasting the best years of their lives in vainly trying to qualify for a profession they can never hope to enter. As all will enter the Militia, all will serve their country, and though, of course, they will do so for only a short period each year in time of peace, still, in time of war, they would add enormously to the strength of our armed forces, all branches of which are perilously short of officers. I do not know if it has struck many people that in the last twenty-five years we have added 40,000 men to the Regular Army and have created a Reserve of nearly 80,000 men, and in the same period have largely reduced the number of our Regular officers. Whether in war-time the men unfit for service and the spare Reservemen are transferred to the embodied Militia, or whether they are formed into Provisional battalions, officers will be equally required, and subalterns can only be obtained from the Militia, with possibly a few from the Volunteers. The Regular Army at home is on a low peace footing, and in case of war would require many hundred subalterns; how many I do not know; but when officers for all the staff, for transport, signalling, mounted infantry, and possibly cyclists, are withdrawn from the regiments, there will be but few left for company work, and those vacancies must be filled, if they can be filled, from the Militia. How many subalterns will be left in the Militia under present conditions, after all these drains, it is impossible to say, but they will be easy to count when the time comes. There are only two ways of getting men for any job: You must offer advantageous terms or use compulsion—in other words, pay or press. I believe that nothing short of a large increase of pay would induce any great additional number of officers to enter the Militia. What the average young man of the right stamp is in search of, is a profession that will give him either a respectable income at once, such as he may find in civil life, or that giving but small pay for the moment, offers reasonable prospects of a respectable career, such as a commission in the Army. Now it is impossible to make the Militia into a career, therefore I repeat that you can only fill the subaltern ranks of the Militia by making all officers enter the Army through it.

The question of captains is still more serious, there being upwards of 150 vacancies at this moment, being sixty-three more than there were in January, 1896. The youth of most of the subalterns and their short service make it, in many cases, impossible to promote them. Every year large numbers of comparatively young officers leave the Army, whose services are lost to the country, but would be invaluable in the Militia. The attempt made to induce some captains to join the Militia, by giving half pay for ten years, has not been very successful. All officers who leave the Army receiving any pension or gratuity, should be liable to be appointed to the Militia if their services are required; but as this might cause some hardship, the deficiency could possibly be met by giving increased pensions to those officers who are entitled to them, and by giving half pay to those officers who receive a gratuity, or leave without becoming entitled to gratuity or pension, for so long as they continue to serve in the Militia. £120 a year to 150 captains would be but a small sum to ensure a certain additional amount of professional knowledge in the higher ranks of Militia battalions.

All officers, when they first join the Militia, in addition to the present two months' preliminary or recruits' drill, should be attached for two months to a Regular unit between their first and second trainings.

The question, however, of further instruction is difficult to deal with; at present little encouragement is given to officers to go through the various classes, while the difficulties are great and in many cases the Regulations appear to throw obstacles in the way. I have alluded once before in this theatre to the number of letters and length of time that must elapse between the despatch of an officer's application to go to, say, Hythe, and the receipt of the answer. In my own case the letter must go through eight hands, and all the way back, which makes with Sundays eighteen days at least, even if the letter goes on at once from each office. As some one is sure to be away in this long chain, it means probably a month before an answer can be received, and meantime the opportunity may have passed.

Surely there could be little difficulty in simplifying the Regulations. Certain schools and classes should be open to every Militia officer, who is willing and able to attend them. Every officer wishing to attend a school or class, should be given at the end of the training a letter from his C.O., countersigned if necessary by the G.O.C. the district, stating that he is recommended for leave to attend certain schools or classes. He should be able, by enclosing this letter, to apply personally to the head authority of any school or class, who should give him his answer direct. If only 100 officers go through a course in a year this would save at least 1,500 letters. No limit, either maximum or minimum, should be placed on the number of officers who may attend, as if there is no room in barracks they could draw lodging allowance, as is often done now under similar circumstances; and, on the other hand, these schools and classes should be always held on definite dates, even if only one or two officers apply to attend. It frequently happens that an officer suddenly finds that he has time to attend a class or school, and he

would thus be able to go to it at short notice if he has the qualifications. At the same time a keen officer would not, as now, be liable to repeated disappointments, because there are not enough applicants to form a class.

On the other hand, officers should not be ordered to classes or counter-ordered at a few hours' notice. After all the Militiaman is not a professional soldier; he does not get a living out of his work, nor has he invariably unlimited leisure and a large income. He cannot sit outside the regimental orderly-room during the whole eleven months of the non-training period waiting to know what is to happen to him. He has his own arrangements to make in many cases, his own profession to attend to, and serious inconvenience and expense are inflicted on him if his arrangements for months are upset at the last moment.

Officers should receive full pay and allowances whenever they go through a course, subject, as now, to their passing the final examination. The Militia is not, nor does it pose as, an unpaid Force; but under present regulations the Volunteers, who are by way of being unpaid, receive grants for passing examinations which Militiamen have to attend gratis.

I should like to see all infantry officers permitted and encouraged to attend the field fortification class at the S.M.E., Chatham. If sufficient surveying were added to teach them enough to read military maps easily and do a simple road report, it would be an additional advantage.

All officers should be encouraged to attend the course at Hythe, which might be shortened, without detriment, by omitting all the learning by heart of lectures, etc., and also the extra subjects, except, of course, for those officers who wish to obtain the post of I. of M.

More encouragement, even to offering extra pay, should be given to officers to go through a course of signalling. In many units there must be old soldiers once acquainted with this art, who, by annually refreshing their knowledge under a competent instructor, would make fairly efficient signallers.

These courses, together with the present authorised instruction would suffice to bring the infantry officer fairly up to date, and at all events would largely increase his present stock of knowledge.

With regard to artillery and engineers, in addition to some of the before-mentioned classes and schools, the officers should go through the long course of gunnery and engineering, receiving extra pay for a certain number of years, but being required, after a certain time, to go through the course again to furbish up their knowledge, as is now done in the Regular branches of those arms. It would be difficult, to insist upon all officers of these branches going through these long courses, but they should be encouraged to do so in every possible way, though at the same time all consideration should be shown to those officers, whatever branch they belong to, who are prevented, by the calls of their civil professions, from giving the requisite time for those schools and classes.

I now come to the position of the commanding officer, especially in the non-training period.

There are several people in authority over a Militia battalion :—

1. The commanding officer, who only commands for twenty-seven days, although he is nominally responsible for what takes place the rest of the year.
2. The colonel commanding the depôt, who is in actual command the rest of the year.
3. The adjutant, who is officially considered responsible for all parade work outside the training, and who is in actual command during the whole non-training period if the headquarters of the unit are not at a depôt.
4. The district recruiting officer, who is responsible for the recruiting.

No human being can say where the authority of any one of these officers begins or ends; and as results are good or bad, it is in the power of any one of them to take the credit or disclaim the responsibility.

On the Saturday the regiment is dismissed the C.O. becomes a non-entity. He has nothing to do with the Permanent Staff, and nothing to do with the obtaining or drilling of recruits. His time is taken up in signing a vast quantity of returns he has no opportunity of verifying, and a large number of receipts he cannot check. He is told that he is encouraged to visit his recruits, yet he has no *locus standi* at the depôt, and could be ordered out of barracks by the colonel commanding; and I believe that he cannot, during the non-training period, order his own Permanent Staff or recruits to parade for his inspection if either his own adjutant or the colonel of the depôt chooses to object. His whole position is anomalous, and if things were carried out logically he would have to salute his own adjutant during the non-training period.

It is of the utmost importance that the commanding officer should be in real and effective command all the year round. He should be made exclusively responsible for obtaining officers and recruits, and for the training of both. A comparatively small addition of pay would make it possible for him to exercise sufficient supervision, without having, as now, to do it, if he does it at all, at his own expense, feeling all the time that he is interfering with another man's work; and, perhaps, being pretty plainly told so. His adjutant should be chosen by himself, and should be his assistant and secretary as well during the non-training period as in the training; and the colonel commanding the depôt should interfere as little as possible with the interior economy and discipline of the battalions that are under his supervision. The commanding officer should not have to take or retain any sergeant on the Permanent Staff of whom he does not approve. At present, if he complains about a N.C.O., he is told to take the first opportunity of trying him by court-martial. Everyone knows that a man may be useless, or worse, as a N.C.O., and yet may never commit an offence he can be tried for.

It would be a great advantage if the C.O. had the power of at once dismissing bad characters. At present he must apply to the G.O.C. the district after the training, which gives the man every opportunity to give

trouble during the training; and we all know how much trouble and expense one bad man can cause.

The best results can never be obtained from any organisation which is under divided, and constantly changing, authority; and by making one man exclusively responsible, the efficiency of the Militia must be largely increased. That man can only be the C.O., more especially as no two regiments are precisely alike; and the little local differences, the state of trade, the character and industries of the resident population, must be better known to a man who has been many years in the regiment than to any officer, however good, who is merely attached for a short time.

Warrant rank should be restored to the sergeant-majors. The backbone of the Militia is the Permanent Staff. They, under the adjutant and quartermaster, do the whole work of the regiment for eleven months of the year, and have most important work to do during the training. They do most of the recruiting for both Army and Militia, and much of the general work of the depôts. They are, in all parts of the Kingdom, more in touch with the civil population than any other body of men in Her Majesty's Service; and they should be picked men, who are thoroughly satisfied with their position, which should be an object of envy to the civilians around them. Instead of this, they are, in some cases, worse paid than the corresponding ranks of the Army, and their head—the one man who should be placed in the best possible position—is labouring under a perpetual and loudly-expressed grievance. It is a hardship on the man himself, it is a slur on the position of sergeant-major of a battalion, and it tends to lower the status of the whole Permanent Staff and to discourage the best men from joining it. We can all understand what the feelings of a commanding officer of Militia would be, were he not permitted to rise beyond the rank of major; and the position is just the same with regard to the sergeant-major and the warrant rank.

Surely it would be possible so to arrange matters, that the warrant-officers should not clash when there are two or more at a depôt. If the depôt sergeant-major was made a separate rank, senior to all battalion sergeant-majors, the difficulty would disappear; and, after all, little was heard of any friction previous to the establishment of the warrant rank in 1881, when for many years depôts had gone on peacefully with all the sergeant-majors holding the same rank. The remaining N.C.O.'s of the Permanent Staff should be put in a proper position as regards pay and allowances, and could then be more carefully chosen. It should be the object of the C.O.'s of the Regular battalions to send good men to the Militia, from which they in most cases receive directly such a large proportion of their recruits, and by the assistance of the Permanent Staff or which they receive nearly all.

The Militia non-commissioned officers not on the Permanent Staff have a thankless task to carry out, and are most insufficiently paid—3d. extra *per diem* to a corporal, and 9d. to a sergeant, naturally is utterly insufficient to attract good men and induce them to put on the stripes. This trifling pittance in the case of a sergeant will just pay his batman and his subscription to the sergeants' mess. These men are expected to

assume the responsibility, and do the hard and disagreeable work, of a N.C.O., and to keep up discipline among men who are their own comrades in civil life, for the sake of literally a few pence.

It is no use expecting first-class work for second-class pay. If a man does certain definite work he ought to get the proper pay for doing it, whether he does it all the year round or only for twenty-seven days. Moreover, in civil life, a man who is temporarily employed generally gets higher wages than a man who is in permanent work. There is no reason why these non-commissioned officers of the Militia should not receive the same daily pay as the corresponding ranks and arms in the Regular Army, just as the Militia private receives the same daily pay as the Regular private.

Some officers say that they are not worth any more pay; but if you want a good man you must offer good wages, and you will get him.

At present it is most difficult to obtain N.C.O.'s, and many of those obtained are bad; but when they are fairly treated, and get respectable pay, as is the case in the Engineer Militia, they are wonderfully good considering the drawbacks they must necessarily labour under.

The establishment ought to be the same as the Regular Army; if forty corporals, assisted by as many lance-corporals, are required for a battalion of the Line, how can the work be done in the Militia by thirty-two corporals, and in the Militia there are no paid lance ranks? As a matter of fact, the duties are really severe on both sergeants and corporals, and an addition to the establishment of both ranks is absolutely necessary.

The bad pay militates against the proper training of N.C.O.'s, as their numbers are so small, and the training is such a rush, that it is only during the preliminary, or recruits', drill that there is time to instruct them in their duties, and the pay is so small and the position so indifferent that there is often great difficulty in getting them to come up with the recruits. Again, the system of only calling up a certain number is detrimental, as a man is never certain that he will be taken on, and the whole matter gives rise to endless correspondence and trouble both to the Militia N.C.O.'s themselves and to the Permanent Staff.

All the N.C.O.'s should have the right to come up for the preliminary drill or to attend at the dépôt for two months during the non-training period. They should be allowed to join the Saturday before the men come up, and go down the Monday after, should they so desire, and by this would not have to travel, often long distances, with the privates. They should never be billeted in the same house as private Militiamen, and in camp every three or four sergeants should have a tent to themselves, to lift them out of the rank and file.

As regards their better instruction, they should be required to do the long courses of gunnery or engineering if they belong to the artillery or engineers, and three months' duty with a Line regiment, preferably at a camp of instruction if they belong to the infantry.

I should much like to see the C.O. empowered to occasionally promote a Militia sergeant on to the Permanent Staff, should he wish to do

so. An exceptionally good man could thus be rewarded in the best possible way, and this would provide a great incentive to all the rest to do their duty well.

By these means any inefficient N.C.O.'s could be improved or replaced, and the present vacant posts filled by respectable men, who, though they could not under ordinary conditions be equal to Regulars, yet would have substantial inducements to do their duty to the best of their ability, and would, with a short embodiment, be equal to any demand that could be made on them.

I believe that many men, who leave the Army as N.C.O.'s and settle in the large towns, would gladly enter the Militia of their native counties provided they could have their railway fares paid to and from the regiment, as they would thus be enabled to visit their friends at no expense to themselves. These men would be of additional value, as they would not mix with the privates during the non-training.

The question of deficiency of men and the causes thereof is too long to go into fully now, but I would point out some important facts.

First, the numbers have not kept pace with the increase of population in England and Wales. From 1871 to 1891 the proportion of Militiamen per 100,000 male inhabitants fell from 579 to 441, or, to put it another way, in 1891 we should have had to raise some 20,000 more Militiamen to get back to the proportion of twenty years before. Though the actual numbers have slightly increased since 1891, yet they have barely, if actually, kept pace with the estimated increase in the population since that date. Again, the differences between neighbouring counties apparently identical in character are most surprising. The following examples show the proportion of Militiamen present and absent with leave in 1891 per 100,000 male inhabitants of the county according to the census of that year:—

| | | |
|-----------------------|-----|-------------------|
| Staffordshire | 518 | } difference 141. |
| Warwickshire | 377 | |
| Nottinghamshire | 474 | } difference 193. |
| Derbyshire | 281 | |

All these counties have a similar population, chiefly employed in mining and manufacturing. In the following cases they are purely agricultural and have no large towns:—

| | | |
|---------------------|------|-------------------|
| Dorsetshire | *526 | } difference 204. |
| Wiltshire | 322 | |
| Herefordshire | 1012 | } difference 554. |
| Shropshire | 458 | |

* Providing besides some 40 or 50 men for the Hampshire Artillery.

Again, the smaller the county the larger the proportion of Militiamen, which proves pretty conclusively to my mind that recruiting is, as a rule, conducted unsatisfactorily at any distance from headquarters. The large towns furnish but few Militiamen in proportion to population—the Metropolitan district being in this respect far and away the worst in the British Isles—not so much from unsuccessful recruiting, as from the

enormous amount of absentees, which are upwards of 15 per cent. of the enrolled strength.

One more fact I wish to draw attention to is the steady disappearance of the old class of civilian Militiamen. It appears from the returns that for many years, while the number of men under twenty years of age has been slightly, and of those over thirty enormously, increasing, the number of those between the ages of twenty and thirty has steadily decreased. The civilian Militiaman is the man between twenty and thirty. He never has been a soldier and does not want to be—but he likes Militia life for a variety of causes, he possesses any amount of *esprit de corps*, and he is an excellent and valuable man and represents a distinct class. The men over thirty are mostly old soldiers, and the lads under twenty go on to the Army in large numbers; but the old-fashioned pure civilian Militiaman is disappearing from the Force, and is more often to be found in the Volunteers. I do not wish to limit either of the other classes, on the contrary, I wish we had more of both, because as far as my experience goes the old soldier makes an excellent Militiaman, and also I fully recognise that one of our duties is to feed the Army as much as possible; but I wish that we could recover the pure civilian.

It must be left to experts in recruiting to suggest a remedy for the present unfortunate state of things, but I must add that the Volunteers have for many years failed to obtain their recruits from the middle classes, and have, if I may say so, poached on our preserves—the labouring classes. I constantly hear distinguished Volunteers lament the present state of things, and if any means could be devised whereby the middle classes could be restored to the Volunteers and the labouring classes to the Militia, both Forces would be greatly benefited.

I now come to what, in my humble opinion, is a vital point, namely, the suggestion that the time has come when the Militia should be enlisted for general service in time of war, instead of only for service in Great Britain and Ireland. This, of course, would do away with the necessity for the Militia Reserve, and it would be allowed to die out.

The whole system of immobile localised forces is obsolete. At the date of the resuscitation of the Militia on the basis of the ballot, the Empire had hardly begun to exist, and our foreign garrisons were limited to Gibraltar, Minorca, New England, and the West Indies. The only possible enemy was France, with or without the help of Spain; and the only possible danger, a French invasion accompanied by a Jacobite rising, or a Jacobite rising assisted by French troops. But few years before, the country had been panic-stricken by the successes of Prince Charles Edward, rendered possible by the absence, on the Continent, of nearly all our small Standing Army, and some additional Force, as a protection both against foreign raids and against home rebellion, was loudly called for. The ballot could only lay hold of those men who had settled abodes, who were, therefore, of a far superior class to the average Regular soldiers at that time. In those days an order to proceed on foreign service, even in peace-time, was equivalent to a death sentence on the vast majority of the men. The losses by disease were appalling. A tour of foreign garrison duty

practically annihilated a regiment, and it was evidently impossible to condemn to this terrible fate the respectable conscripts who filled the ranks of the Militia. Every effort was made, therefore, to keep the *personnel* of the Force separate from that of the Regular Army. Militiamen were not allowed to join the Army, nor were men of unsettled habits allowed to serve in the Militia; and it was not till the time of the great French wars at the end of the last century that the whole system of the Militia was altered by allowing the men to volunteer into the Army. When, in the Peninsula, we finally put forth our strength on land, the Army was fed almost entirely by Militiamen, who were induced by a mixture of bribery and bullying to transfer their services. Since that time the links between the two Forces have been constantly drawn closer. The Militia infantry forms part of the territorial regiments—the Force holds 30,000 of its best men at the immediate disposal of the Army, irrespective of locality—and public opinion has advanced so far, that it now seems to be taken for granted by everyone, that in the event of war the Militia will at once volunteer for garrison duty abroad, and may even be employed actually at the front.

This being so, the existing condition of things is unfair to both officers and men. At present the Force is enlisted purely for service at home (with the exception of the Militia Reserve), and yet we know that we are expected to volunteer for foreign service in the event of war. Every man will be told that he need not go, in the event of his not wishing to volunteer; and yet what officer, or even what private, will have strength of mind to refuse to volunteer when all his comrades do? It is unworthy of the military regulations of a great country to force or trick men into service for which they are not engaged; and though extensively resorted to in our grandfathers' time, was on a level with the other dubious courses pursued to keep up the fiction of voluntary service, while practically filling both Navy and Army compulsorily.

I do not believe that the enlistment of all men for general service in the event of war would exercise an adverse effect on recruiting. On the contrary. I am convinced that the change would give the Militia a position such as it has not hitherto held in the eyes of the public, and that this must act beneficially on the recruit-giving classes.

At present every qualified man, with hardly an exception, applies for the Militia Reserve, which shows that foreign service, even with a strange corps, has no terrors for him; and under the new conditions, he will know that most probably he will serve in his own regiment under his own officers. A slight addition to, and a re-arrangement of, the present bounties would prevent any man losing money by the abolition of the Militia Reserve.

Under present conditions, if embodied for home service only, he must lose his civilian employment and be separated from his family, as regiments cannot remain at their headquarters, nor can hundreds of wives and children be dragged all over the United Kingdom.

Enlisting the Militia for general service gives advantages to the country and to the military authorities, which are incontestable. The

ormer could by a stroke of the pen add some 80,000 men of all ranks to its disposable Army, and the latter could at once make arrangements for strengthening any of our foreign garrisons, without having to dislocate any expeditionary Army Corps which could remain intact, while the Militia reinforced our coaling stations. A Militia regiment could be embodied in far less time than it would take to call out, and incorporate, the Reserve of any Regular regiment.

Possibly some few officers would be unable to continue to serve with this new obligation hanging over their heads, but they must, like the men, lose their civilian employment if embodied, and we are all at this moment serving with the knowledge, that we shall be asked and expected to volunteer for foreign service at a moment's notice, in case of war, while we have not the advantage of knowing exactly what we shall be wanted to do; and apart from the Militia Reserve, in appearance we add nothing to the offensive power of the Empire. By openly accepting the obligation to serve abroad, we shall merely convert a secret liability into an acknowledged one, and we shall henceforth occupy our true position as the real Reserve of the Army.

One word to call attention to a remarkable omission. The duty of enforcing the Militia ballot is not one of those transferred to the county councils, and the responsibility apparently still rests with the lords-lieutenant and their deputies. How a rate can be made to raise the money for the expenses of the ballot, or pay the fines in case of the quota falling short, I do not quite see; and the position is still more curious as regards the new borough counties, as they possess no authority to carry out these duties themselves; and it is to be presumed that the lords-lieutenant of their parent counties, upon whom the obligation still rests, would have no jurisdiction.

An act to regulate and revise the application of the ballot seems absolutely essential. It may be said that we shall never again resort to such a mode of raising troops, as the country would not stand it; but I would point out three facts: 1. That it is impossible to say what the country might be forced to stand. Forty years ago a man who suggested the application of conscription in the United States would have seemed mad; and yet we all know that during the great War of Secession, it was heavily enforced on both sides, and that in a country far more divided in opinion than ours, and with a far weaker central authority than we have. 2. That we have now most extensive land frontiers to defend. We march in America with the United States, in Asia with France, Russia and China, and in Africa with nearly all the Great Powers. 3. That with the exception of the Crimean war, which had special features, we have never, since we were a nation, attempted to engage in a European contest relying entirely on voluntary service, either for the Army or the Navy. Even during the Crimean war our voluntary system broke down, and we were forced to enlist large bodies of foreign mercenaries; and, as this resource is now entirely closed to us, any prolonged war with a Great Power would oblige us to fall back on some system of compulsory service.

Had we 100,000 men ready to send anywhere at short notice, with another 100,000 to follow, a heavy blow dealt in the earlier stages of a contest might obviate this necessity; but as things are now, we are only prepared to send out our troops in mere dribbles, as compared either to the strength of foreign Armies abroad, or to the large armed force we ourselves keep idle at home. What we require to supplement the Regular Army is a large Reserve Army, not only efficient, but above all mobile; and the country can obtain this at small expense by seriously turning its attention to the increase, training, and development, of that ancient and well-tried Force—The Militia.

Colonel FREDERICK C. HOWARD (Lieut.-Colonel, retired pay), 3rd Bn. Yorkshire Regiment:—I could have wished that I had not been called upon first to speak in the presence of so many distinguished officers; but having the honour of commanding a battalion, I could not altogether sit silent during the discussion. With regard to what Lord Raglan has said of the officers, I think that the age of sixteen is a little too young for an officer to join. At the same time, I think his suggestion that all officers should go from the Militia on to the Army is an excellent one, though I consider what we chiefly want are permanent subaltern officers, as we have in the field rank and among the captains. Captains of the Army being offered the advantage of a pension, has induced some few to come into the Militia; but it is not altogether very successful; and I think if the amount of pension were raised, we should get far more captains from the Army. With regard to the permanent staff, Lord Raglan has said that it is the backbone of the Militia. That, of course, is the case; but the Militia non-commissioned officers are only a part of that backbone, and from experience I think I can say they are not by any means what they ought to be. Lord Raglan mentioned that they had very arduous duties. I do not think that their duties are very arduous, simply because they do not know them. The duties of non-commissioned officers are chiefly assumed by the colour-sergeants of the permanent staff, and the consequence is that the colour-sergeants have more than they know how to get through with in their work. As an example of the difficulty of getting sergeants, I may say that I always find very great difficulty in getting a provost-sergeant; and the reason, I am told, is that a provost non-commissioned officer is really afraid of doing the duty. It is said that when they come down from the training the men make it so unpleasant that they really do not care about it. I think that is an example of all. The non-commissioned officers want to be on a better footing with the men, and from a better class and paid better. There is one point on which the lecturer has not touched at all, that is the question of musketry. Musketry in the Militia is simply a rush, and nothing else. It is absolutely impossible to teach men how to shoot in what is really but thirteen days. You cannot take very much more, and it is absolutely impossible to teach musketry in that time. I therefore humbly suggest that the Militia training should be extended to at least thirty-four days. Another point on which Lord Raglan did not touch is the not unimportant one of dress. You cannot make a soldier proud of himself unless you dress him properly; and I think the way in which the Army Clothing Department consider that any sort of garb is good enough for Militiamen should be taken some notice of. The abominable frocks I have seen issued to my quartermaster are enough to make one's hair stand on end. The same may be said with regard to the great-coats. Then there is another thing that I had the honour of putting before the Inspector-General of the Reserve Forces—namely, the want of boots! How can a man be expected to get on for twenty-seven days with only one pair of boots? If he gets wet, where is he? I should therefore suggest that the authorities should allow two pairs of boots: one pair to be given to the men at the close of the training, and one pair to be re-issued at the following training with a new pair; thus a man would always have a pair for training. With these few remarks, I will leave the question of com-

manding officers to other authorities. I do not feel called upon to give an opinion upon that subject. If it is considered that a commanding officer is to be for 365 days, except the twenty-seven days, a nonentity, that perhaps rests with them. It is too delicate a subject for me to touch upon, holding that rank myself. I think that all the reforms which Lord Raglan has so ably put before us are simply a question of money. But I hold that England possesses in the Militia a magnificent Force, if it were only turned in the right direction. What the Militia sorely requires is reform.

Colonel T. MYLES SANDYS, M.P. (late Captain Royal Fusiliers), 3rd Bn. Loyal North Lancashire Regiment:—As a commanding officer of a Militia battalion, and one who has had the privilege of twenty years' service in the Army before joining the Militia, I perhaps may be allowed to say a few words on the organisation of the Force at the present time. Before offering the few remarks which I shall venture to do on the present occasion, I think I shall only be expressing the feeling of those who have had the privilege of listening to the very able lecture which has been delivered to us by Colonel Lord Raglan, in saying how very important it is, and how, if I may use the expression, "brimful," it is of valuable suggestions for improving the Militia force. There are so many points raised in this question of Militia organisation that I feel in the very few minutes which I may claim for the remarks which I have to offer that it is impossible to go into them at any length and to do them justice. But one may say that the question of Militia organisation is so intertwined with that of Army organisation, that it would be hardly possible to deal at length with the one without going to some extent at any rate into the other; and I take it in doing that on the present occasion I should not be in order in speaking on both these points. There are, however, general principles embodied in the lecture which, perhaps I may be allowed to advert to. In the first instance, the Militia has been referred to as the old Constitutional Force of this country; and that, as we know very well, is the case, as the Militia existed in the United Kingdom for hundreds of years before the Regular Army was formed—in fact, from the time of King Alfred, although in rudimentary form. And so the Militia force not only has the traditional and prescriptive right of being the old Constitutional Force of this country, but has also the additional advantage of being an extremely inexpensive Force. It is capable, if it is taken judiciously in hand, at the present time, of an almost indefinite expansion. It is an elastic Force; it is inexpensive in peace-time; it is capable of a considerable expansion in the time of national danger; and it can be much improved at once by some little attention to its organisation, and by according to it that measure of public support and approval which is so well merited; and it can, without much difficulty, be made to fulfil its true position, which is that of the second or supporting line of our Regular Army. But it seems to me that the point which Lord Raglan has placed first on his paper, namely, the deficiency of officers, is a point to which we should address ourselves before we can very well deal with other parts of the question; therefore, the remarks which I shall venture to offer will deal mainly with that particular point. I may say, perhaps, that I am entirely in accord with Lord Raglan's views as to the advisability of letting all officers of the Regular Army pass through the ranks of the Militia force, and being favourably reported upon before they are allowed to go up for their Army examinations. At present our subalterns in the Militia force are almost entirely—I will not say entirely, but in some regiments entirely—composed of young officers on their way to join the Army, and the system has been found to work extremely well so far—that is to say, in peace-time. But in the event of war, what would happen? The first thing that would occur would be that the whole of these subalterns who are on their way to join the Army would be at once taken from the Militia officers' ranks, at present not at full strength, in order to be passed forward into the Line; and you would have the officers' cadres of Militia battalions left with its field officers, possibly with a short allowance of Militia captains, and with no subalterns at all. Now, if

all officers who are going to join the Regular Army were passed through the ranks of the Militia, there need not be any limit to their numbers till the regimental cadres were full, and there might be a sufficient number of subalterns attached to every Militia regiment, to allow a certain percentage of these young officers being withdrawn in order to fill up the vacancies as required in the Line battalions, and still allowing a certain proportion of subalterns to be left in the regimental cadres, so as to enable the Militia to retain enough subaltern officers to do the work which would be cast upon it with additional severity in war-time. I will give that as one reason for wishing to pass all young officers in future through the ranks of the Militia. Other advantages of this plan are clearly touched upon by Lord Raglan in his paper just read, and therefore I will not trouble you with anything more upon that point; but I would say further, with reference to Militia officers generally, that I think it would be advantageous that they should be encouraged to qualify themselves in the knowledge of their professional duties by having the classes and schools of instruction thrown open to them in the manner suggested by our lecturer. At the present time, if an officer wishes to qualify himself in signalling, or in that most important branch, viz., field engineering, which might prove to be of great importance if Militiamen were required to take part in any field operations, I will not say that he is actually discouraged in attending these classes, but the difficulties which are put in his way are so great, that although permission has been accorded to Militia officers to join classes for instruction, yet, practically, they are never able to do so. I think an improvement in this respect might be made (I am now only touching upon the broad questions, without going into details). Then, with regard to the question of enlisting men in the Militia force, for serving abroad when they are required in time of war to do so, I am convinced that not only would that be exceedingly popular among the men throughout the whole of the Militia force, but I think it is not improbable that it might make some addition—I will not say a very large addition, but some addition—to the means of filling the commission ranks in the regiments, owing to the popularity which the Force would derive if that Order were passed. I am strongly in favour of enlisting the Militia force for service wherever it may be required to serve in war-time. I am sure it would be popular in the Force. It is well known at the present time that the Militia are ready to undertake any duty which they may be called upon to perform; but if it were made part of their agreement on enlisting I think it would add materially to the general efficiency of the Forces. I do not propose to touch at much length upon other points, but I think the withholding of warrant rank from the sergeant-majors of the Militia is a point which should be considered, and that the difficulty should be removed. With regard to the subject of the number of non-commissioned officers of the Line attached to Militia battalions on the permanent staff, I may say that I have written officially and have taken opportunities, when they have been afforded to me, to press that there should be two Line non-commissioned officers per company for company work in every Militia battalion. At the present time some of those non-commissioned officers are withdrawn from the companies for certain other battalion duties, and this ought not to be, as it is requisite for the discipline and efficiency of the Militia force, considering the extreme youth and inexperience of our subalterns that every company of a Militia battalion throughout the Service should have one or two sergeants free for company duties alone; and that the number should not be allowed to be interfered with under any circumstances whatever. It would necessitate the granting of four extra Line sergeants per battalion for battalion duties, and would mean so much extra cost. But I can only say that it is impossible to get any efficient working military or other machine without spending a certain amount of money upon good working details, and the amount of money spent upon this would bear no proportion to the good which would result; and I feel quite sure that in this way the efficiency of the Militia force could be added to by the expenditure of the public money in the direction which I have pointed out.

Major R. HOLDEN, 4th Bn. Worcestershire Regiment :—I am sure we are all very much indebted to Lord Raglan for his interesting paper. No one in this room knows better than I do the amount of trouble that he has taken in collecting the information upon which he has based his suggestions. It is very difficult in the short time at one's disposal to refer to all the subjects one would wish to, but I will do so as briefly as possible. With regard to the deficiency of officers, Lord Raglan's proposal would, no doubt, at once remove the present difficulty; but as, in my opinion, there is no likelihood of the authorities adopting such a proposition, it would be well for us to suggest some other less drastic measure. To my mind the greatest difficulty is in regard to the subaltern ranks. Commanding officers can, by means of attaching officers of other battalions, get on somehow in time of peace, and in the event of embodiment there would, judging from previous experience, be no difficulty whatever in getting any number of retired Army officers willing to accept companies. In this respect it is interesting to compare the Army Lists before and during the Crimean war. In 1853 there appear a large number of vacant companies, but in 1855 there is scarcely a vacancy; in some regiments every single captain being an ex-Army officer. I would prefer to suggest as a remedy for the present dearth of captains, that all officers of the Army drawing retired pay, or belonging to the Reserve of Officers, should be required to serve a certain term of years in the Militia. Were this suggestion acted upon, and were the authorities to increase the number of commissions given to Militia subalterns, I certainly believe that the commissioned ranks of the Militia would soon be filled up. We have been told that the officers are the weak spot in the Militia, and that they are not up to their work. If that is the case, the blame rests not with us, but entirely with the authorities. Certain qualifications for the various ranks are laid down in the Regulations; and these qualifications are fixed by the military authorities themselves. All Militia officers are required to pass examinations before boards of officers of the Army in the subjects fixed by the authorities, and if they come out of the ordeal successfully they are entitled to claim that they are qualified for the ranks which they hold. If the standard is not high enough, it is the business of the authorities to raise it. It is not the duty of Militia officers to run about the country and attend voluntary examinations, at their own expense, in subjects which they may fairly assume are not essential to their efficiency, or they would be made compulsory and not left to voluntary effort. If the authorities think our present standard of efficiency not high enough, let them raise it, and I can assure them that we shall not be found to object. I am strongly of the opinion that warrant rank should be given to sergeant-majors of Militia battalions, and that if commanding officers are to get the most out of the permanent staff sergeants they should have something to say to their selection, and a great deal more to say to their removal for inefficiency. There need be no difficulty nor friction about the granting of warrant rank to Militia sergeant-majors; indeed, if the authorities care to economise and ensure the more harmonious working of the dépôt system, they might dispense with the dépôt sergeant-major altogether. The senior Militia sergeant-major could perfectly well perform the duties. The Militia sergeants, or what are generally called the "Volunteer sergeants," are our greatest difficulty, and in this matter I do not agree with Lord Raglan. I think that, as a body, they are useless, and that any further money spent on the same class would be money wasted. It is just possible that a little improvement might be effected by increasing their pay, and dressing them better—by no possibility could they be worse dressed than at present. But I think the authorities had infinitely better turn their attention to attracting ex-Army sergeants to the Militia; and in this respect commanding officers of Line battalions can, I am sure, help us. With all deference I submit that the latter do not sufficiently lay before sergeants leaving the Army the advantageous terms upon which they can join the Militia as non-commissioned officers. Under paragraph 544 of the Militia

Regulations, men who have been discharged from the Army as non-commissioned officers can be appointed sergeants in the Militia, and receive an annual bounty of £3. But if good men are to be attracted, they must be better treated in regard to uniform than at present. In regard to the rank and file of the Militia, I think that Lord Raglan has under-estimated the number of what he calls "civilian" Militiamen. Speaking from memory, I believe that about 45 per cent. of the rank and file are re-engaged men, men who have re-enlisted after completion of their engagement, or soldiers discharged from the Army. And I feel sure that there are quite 40 per cent. still of purely "civilian" Militiamen in the Force. If the Militia is to be increased in popularity, it is absolutely essential that employers of labour should interest themselves more in the men, and that the dress and equipment of the Force be improved. It is very hard that men should be turned out of their work by employers of labour because they belong to the Militia. I am told that Militiamen are not accepted under the Post Office, which, if a fact, is not creditable to the authorities, and should be enquired into. The dress and equipment of the Force is a subject to which the authorities must pay some attention, if the rank and file, and the classes from which our recruits are obtained, are to hold the Militia in any respect. In my battalion we are still compelled to wear the old brown belts and valise equipment which was condemned by a Board as rotten in July, 1895; and during the Aldershot manœuvres last year we had men constantly at work sewing on the "D's" which were continually coming away from the rotten material. The clothing of the Militia is still very bad, so bad, indeed, that it has become the subject of ridicule throughout all branches of the Service. To show you the extent to which this is the case, I will repeat to you the words of a comic song which I heard recently at a military smoking concert. The song was called "I can't change it," and the chorus to one of the verses, which referred to the men's tunics, ran as follows:—

"I can't change it! I can't change it!

There are spots of grease in front and back!

It fits me like a blooming sack!

I can't change it; it ain't no use to try!

So I'll chuck it and join another force in the sweet by and by!"

Gentlemen, it is really no laughing matter, that Englishmen who join Her Majesty's Service should be subjected to the ridicule of their own comrades of the Regular Army, in consequence of the manner in which they are clothed by the authorities. The question of the enlistment of the Militia for foreign service is one, I think, of the very greatest importance to the Army; especially since we have lately been told by the highest authorities that an invasion of this Kingdom is practically impossible. If this be the case, our occupation in the Militia, beyond being utilised as a recruiting agency for the Army, would appear to have gone. But we, in the Militia, know perfectly well that in the event of war, our battalions will be required to serve in the Mediterranean. Yet, strange to say, the authorities have made no arrangements, beyond mere chance, to secure this being successfully carried into effect. It is presumed that the same course will be followed as during the Crimean war. Then a circular was issued to every commanding officer, his battalion was assembled and harangued by him in a spirit-stirring speech, and the men were invited to volunteer to serve in the Mediterranean. Each man on volunteering was allowed a bounty of £8; so that the ten Militia battalions which served at Malta, Corfu, etc., in 1855-56, cost the authorities not less than £50,000. In the opinion of every single person who knows anything about the Militia, all recruits for the Force could be enlisted for foreign service, in the event of embodiment, without in any way injuriously affecting recruiting¹; so that it would be unnecessary to offer any bounty in time

¹ I sounded the men in my battalion last year and in 1891, and very few have the remotest idea of the area of their service, and they care less. When embodied, they would every bit as soon serve at Gibraltar, or Malta, as in England, Ireland, or Scotland.

of embodiment. The battalions could be ordered at once to the Mediterranean or elsewhere as part of their ordinary duty ; and what an additional strength it would be to the military authorities ; and what a saving of money ! During the Crimean war, 32,186 men volunteered from the ranks of the Militia to the Regular Army, each man receiving a bounty of £7, so that in this manner £225,302 was expended ; when if the men had originally been enlisted to serve abroad, they could have been induced to go to the front for a mere nominal sum, or probably merely for the asking. At least this is the opinion of those who have studied the subject ; and those who know the men which compose the Force in 1897 believe that were the men *enlisted* for foreign service, they would willingly volunteer, without any bounty, to go straight to the front. The arguments for and against this proposal will be found in a lecture which I was permitted to deliver in this Institution in 1890.¹

Captain Sir JOHN COLOMB, K.C.M.G., M.P. (late R.M.A.) :—I came here to listen rather than to speak. It is so long since I was associated with the Militia that it would be hardly proper for me to enter into the details of this subject, as you are much better judges of it than I am. All I can say is, that my recollection distinctly confirms what has been said by Lord Raglan and those who followed him, especially with regard to non-commissioned officers and the sergeant-majors. As to the suggestion of passing officers through the Militia, it occurs to me that there would be an advantage in it altogether outside the Militia, and for this reason : it would give you some opportunity of testing the military aptitude of the candidates before they go up for theoretical examination. I am bound to say that I do not think that your system of competitive examination actually gives you any test of the military aptitude of men, which is an essential qualification ; and I therefore consider that the advantage the Army would derive would be probably considerable if, in the first place, a certain standard of military qualification were insisted upon before competitive examination, and if a candidate carried up to his competitive examination marks for military aptitude. The only other point I wish to speak upon is this : With regard to the application of Militia to the service of the State, to my mind a great deal of what you may call the "twilight" position of the Militia is responsible for a great deal of the difficulty of getting officers, and the difficulty of keeping the Militiamen, to that state of efficiency which we all desire. I feel very strongly that it is too much forgotten by the authorities of this country that a position has been forced upon the Militia, not through their action. We went through wars with the Regular Army and the Militia force only. Down to the Crimean war these were the only two military Forces. Now the Volunteers, created by the spontaneous action of the nation, imposed upon our military system another Force—the Volunteers—which has grown to huge proportions. Between the Army and the Volunteers the Militia has been crushed out. Looking at the requirements of the Empire, I say we have to face that position. We went through the old war moving Militia about this country, but the conditions of the movement of troops are completely changed. When I remember that you can move a Militia regiment from Halifax in Yorkshire to Halifax in Nova Scotia, or from Wales to Bombay, or from Scotland to the Cape, with much less inconvenience and in a much shorter time than during those old wars you brought the Donegal Militia to Dover, I think limiting Militia service to the United Kingdom is misappreciating the power that steam has given us with regard to the possible extension of our Militia power. Therefore I came here to listen, because I have been constantly told when I talk about extending the area of service of the Militia that it is a dream, for it would immediately stop the recruiting of the Militia. I do not believe so. I never have thought so. I rejoice, therefore, that Lord Raglan, with his experience and knowledge comes forward, and at a large and influential meeting of the United Service Institution boldly grapples with what I believe to be the weak point of our military system at this moment, viz., your want of mobile power in service

¹ JOURNAL, R.U.S. Institution, Vol. XXXIV., p. 745.

over the sea. I only venture to say that while I am a strong advocate for making it the main feature of our present military policy to extend the area of the service of the Militia, I am not at present convinced that you can carry that to its extreme limits. My own belief is, that you should free the Militia forces from restrictions confining it within the United Kingdom, and that you should extend it to within the Empire. I merely throw this out, because I do hope to hear some discussion on that point. We move by slow degrees. I put it to you as a question that Militia officers of experience should discuss. I very much fear that if you try to take too long a jump you may be defeated altogether. If you say "general service," I think you may be defeated; but I do say that in my belief the time has come—and the speeches we have heard to-day, and what Lord Raglan has told me, confirm that belief—when a new departure in the military policy should be made in order to give that military strength and power of movement over the sea which is so essential to us, and that the first definite practical step to take now is the extension of the service of the Militia beyond the United Kingdom, but within the limits of the Empire.

Colonel J. ALEXANDER MAN, 3rd Bn. Gordon Highlanders (commanding Local Forces, Trinidad and Tobago):—I rise in answer to your call, Sir, with considerable diffidence, because, although it is 36 years since I first put on the uniform of the Militia battalion to which I still belong, and although I had the honour of commanding that battalion for three years, yet the greater part of my life has been spent in military service of another and more active kind. But I think with deference, that this fact cuts two ways, and that I am enabled all the more easily to approach the subject of this admirable lecture from the standpoint of the good of our common country. I find myself, I am happy to say, in entire agreement, and seeing eye to eye, with Lord Raglan. His points are not only admirably put, but I hold that they are just those upon which we should keep our attention fixed if we are to do any good by this discussion. In the space of ten minutes allowed it is impossible to touch upon more than the fringe of the subjects with which Lord Raglan has dealt. I shall confine myself to one or two of the more salient points. As regards the officering of the regiments and battalions, my view certainly is that for the supply of the *majority* in the junior ranks we must look to young men who are being brought forward to make military service their walk in life. Lord Raglan wishes to see all commissions in the Regular Army filled from the Militia. Well, Sir, when abroad not very long ago I saw it stated in the home papers that a War Office high official had put forward that very view. There cannot be the least doubt of one thing: the plan would at once put an end to any difficulties as regards the subaltern ranks. As regards captains and field officers, I entirely agree with Lord Raglan. I think that—with *well-defined exceptions*—we should look for our supply to men who have served in the Line. I cannot for the life of me see why those who leave the Service with gratuity or otherwise, rendering it necessary for them to join what is called the "Reserve of Officers," should not show forth that Reserve as something tangible by giving Militia battalions, if possible, those of their own counties, the benefit of their knowledge and experience. As regards the rank and file, I was particularly struck with a passage in our gallant lecturer's paper about what he calls "Civilian Militiamen." I know very well what he means, for it happens that, at the time of the late Mr. Stanhope's famous committee, I wrote a paper pointing out that this particular class would be bound, under the new regulations, to disappear from the Force; and I gave my reasons why I believed it. It is not necessary for me to go into that now, but I am sorry to find that my prognostications have so soon been verified. I have been absent from the Militia for the last five years, but Lord Raglan tells us that the class in question has almost disappeared already. I am quite sure that he is right, however, in believing that, though it has disappeared from the Militia, it has not altogether disappeared from the Service of the country. It has simply gone over to the Volunteers. That is so

in my own county to a large extent. Whether the change is advantageous, is not a question to discuss here. For my own part, I am content to regret it. Of all the points put before us to-day, I think the most important is the proposition that the Militia would be improved if the terms of enlistment were altered and if its soldiers were made frankly available for general service. I commanded my battalion, as I have said, for three years. In the presence of an officer who knows that battalion well, who took interest in it, and who understood it, I venture to say of it that it was not a bad battalion. Now, Sir, that battalion, during those three years I am speaking of, was largely raised in numbers, and I myself keenly entered into the details of its recruiting. Well, I say deliberately, and with as much force as that experience enables me to give to the statement, that to ask men to take on for general, instead of local, service would not lose you one desirable recruit. On the contrary, I am convinced that such a raising of the status of the men, *vis-à-vis* the people with whom they associate, would be of benefit to recruiting. A man would go up to the dépôt to be drilled beside his Line comrades—and in my regiment I am proud and happy to say that there has always been the greatest feeling of love and *camaraderie* between us and our Line comrades—he would go up to the dépôt, I say, with enhanced prestige, and with a position which would tend not to hurt recruiting, but to make recruiting much more popular than it is to-day in a district where recruiting is always a difficult matter. What I have said about raising the status of the Militia recruit brings me to the last paragraph of the lecture. Lord Raglan says that we require to supplement our Regular Army by a large Reserve, and he looks to the Militia—of course after the first-class Army Reserve—as that Reserve. Quite so. By allowing the Militia to re-occupy its old place as a part of your Reserve, and by working it up so that it shall be fit to occupy that place, you will make the whole question of Militia recruiting, for officers as well as for men, easier. Of that I am assured. There appears to me to be all the difference in the world between an Auxiliary and a Reserve. An Auxiliary is something which is in evidence : and in evidence the Militia cannot be. A Reserve must of necessity be out of sight : which the Militia is. To give you a very homely illustration : take the Army and Navy Stores here in Westminster. The reserve from which those stores are supplied is not seen ; the auxiliary stores which assist them are just round the corner. But I take it the reserve stores are quite as necessary as the auxiliary. The things wanted to raise the Militia in public estimation—to take it from the position which I am sorry to say it holds to-day on the side of the road, so to speak—and restore it to its proper place in the hearts of its countrymen, are : first, to alter the terms of the men's service, so that they shall not be asked to go to the Mediterranean on occasion, but shall be bound to go there or anywhere else if so ordered ; and, secondly, to see that the officers are compelled, and not merely requested, to know their duty.

Major-General Sir FRANCIS W. GRENFELL, G.C.M.G., K.C.B., Inspector-General of Auxiliary Forces :—I think that the point on which we are most interested is the dearth of officers, and as regards that question I can say with truth that since the time I have been at Head Quarters we have tried—and I may say up to the present time vainly tried—to provide a remedy for this complaint. Although the numbers of officers deficient are, as Lord Raglan says, 700, still that is based on the full establishment of the Militia ; and as 19,000 men are still wanting to that establishment, the absolute dearth of officers, though very disquieting, is not so bad as perhaps at first sight it might appear. Lord Raglan's proposal is one which I fear it would be very difficult to carry out, and for this reason : we have a large opposing establishment at Sandhurst, and in order to carry out Lord Raglan's views, whether they be right or wrong, you would have to do away with Sandhurst ; and I know there would be great opposition to this proposal, both from those who prefer to send their sons to that place, and also perhaps from the authorities, who would have that very large and important military college

thrown on their hands. I can assure you that it is an absolute fact that the numbers of the officers of the Militia go up or down automatically with the numbers of commissions given to the Militia for the Army. I think the Artillery Militia has shown it in a very curious way. At one time a large number of Army commissions were given to Artillery Militia officers, and the Artillery Militia was nearly filled. It was then reduced, and it went down correspondingly. I am very glad to say that the authorities have now consented to give ten commissions yearly to the Artillery Militia. I have advocated this increase for some time, and I was met, as a rule, with the statement that the officers of the Artillery Militia were not so highly educated as those at Woolwich. Curiously enough, the Deputy-Adjutant-General of Artillery has stated that he has gone into the confidential reports of all the officers of the Artillery Militia now serving in the R.A., and he finds that they are quite equal to the average officer who is educated at Woolwich. With that statement we were able to make this change, and I think you will see in a year or couple of years there will be a very large augmentation in the ranks of the officers of the Artillery Militia. The only other point I wish to speak upon is the relation of the commanding officer to the *dépôt*. Lord Raglan has presented to us a most dreadful picture of divided authority. It is my business to inspect the *dépôts*, and also when the Militia get together to see as much as I can of that body, and I have constant communication with the commanding officers. I must say I do not think that there is any absolute desire on the part of the commanding officers of the Militia to absorb the whole of the duties of their Militia battalions. They have their adjutant, and although Lord Raglan talks of the difficulty of access, I know from my experience that, if a commanding officer wishes to see his recruits, or to take an interest in his regiment—he would invariably be welcomed by the officer commanding the district. But in order to accentuate that, we have arranged that for the future travelling allowances shall be granted to the commanding officer twice a year, in order to induce him to go to visit his recruits. It must be remembered that the commanding officer has his own staff-officer in the adjutant. He should work with him on all points connected with the welfare of the regiment; and he does, as a rule, so work with him. The adjutant certainly has a double responsibility to the officer commanding the regimental *dépôt* and to the officer commanding the Militia regiment. But, I think, except in cases where there is a tactless officer commanding a Militia regiment, or a tactless officer commanding a regimental district, the two apparently, as far as I have seen, seem to get on and hit it off remarkably well. Lord Raglan spoke of signalling. With the difficulties of getting in musketry and educating the Militiamen, I really think that signalling might almost be left out. Should we in war trust to signalling which had been taught under these circumstances? You can hardly get through the musketry and the drill in the time. Lord Raglan made one slight error, and perhaps I may be allowed to correct it. He complained of the lack of power of commanding officers with regard to bad characters. If he looks at the Regulations he will see that bad characters can be dismissed during and after training. According to the Regulations there is no time of training in which you cannot get rid of a bad character. I thank Lord Raglan for his lecture and also for the very interesting statistics which he kindly supplied to the War Office with regard to the percentage of Militiamen to the population.

Colonel H. H. A. STEWART (Lieut.-Colonel retired pay), late Donegal Artillery Militia :—The first observation I wish to make is on what Lord Raglan calls the "career," that is, that there is no career open to Militiamen. I submit, however, with great diffidence, that "career" is not an arbitrary or a positive term—it is a relative one. We talk of a boy's career at school, of a man's career at college, and so on. I say it ought to be represented to the authorities that a certain proportion of the adjutancies of the Militia regiments might with the greatest possible advantage be held by Militia officers. From

my own observation as a commanding officer of a Militia regiment for seven years, I can truly say that some of the adjutants sent from the Regular Army were not of a very high class. I can also say, with as great truth, that I have seen and known many officers in my own regiment who would have made most admirable adjutants. When Lord Wolseley was commanding the troops in Ireland, I was called upon to explain how it was there was such a dearth of officers, and how it could be obviated. I stated that in the very depressed condition of the agricultural interest throughout the country, at all events an inducement might be given to the cadets in the families of landed proprietors to join the Militia, with the opportunities of a possibility, or probability, of a certain proportion of them obtaining adjutancies in regiments. Another thing I consider, and I submit it also with the utmost diffidence, that certain staff appointments might be held with advantage to the Service all over the world by Militia officers; and from my knowledge of the qualifications and education of Militia officers, I believe that they would be prepared to pass any examination, side by side with officers of the Regular Army for any staff appointments that might be open to them. Another point, though a comparatively small one, is that the officers in the Militia are given after certain service only honorary rank. Now, honorary rank is usually restricted, or it used to be when I was a soldier, to officers in the non-combatant branches or retired officers. What do we see in a Militia regiment now? We see an old captain, a hoary-headed soldier of some forty-five or fifty years, made an honorary major, and he sits on a court-martial together with a young captain of Dragoons in his teens—and he sits below him. Now, that is not right.¹ Brevet rank, and not honorary rank, should be given to the combatant officers of the Militia. Another thing to which the lecturer alluded is the great need of getting rid of useless non-commissioned officers and members of the permanent staff also, and that trial by court-martial is the remedy suggested by the authorities. I confess that is not in my experience a remedy, and I think what I say can be proved from the correspondence I have had with the authorities. Lord Raglan, in his lecture, states that when a non-commissioned officer proves himself to be inefficient, and so on, the commanding officer is recommended to try him by court-martial. Now, trying a non-commissioned officer is not always a panacea. I remember a case myself where a non-commissioned officer, sent to me from the Regular Army, was the only one drunk on parade when my regiment was on the line of march coming to England. He was tried by court-martial and awarded an illegal sentence. He got off, though the sentence was confirmed by the general commanding one of the districts! There is another thing I wish to say with regard to Lord Raglan's lecture, and which I consider to be a most admirable one. He speaks of non-commissioned officers of the Militia "mixing" with the men, and he seems to deprecate that. I submit that that is not altogether correct. I think it is a very good plan for the rank and file and non-commissioned officers to mix together. I will illustrate what I say by giving you the opinion of an old commanding officer of a Line regiment when I was his adjutant in the Island of Bermuda about thirty years ago. Some case of insubordination occurred in the garrison, and the cause of it was supposed to be the absence of any sergeant from the room along with the men. My colonel said to me, "I may not live to see it; but you will find, Stewart, while you are still in the Army, cases of insubordination will occur owing to non-commissioned officers, sergeants especially, being withdrawn from association with the men." There

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have been a good many cases of insubordination of late in the Regular Army, as no doubt you have all seen. I should just like to be allowed to say, before I sit down, that the authorities are no doubt full of sympathy with the Militia, but I believe a little help is worth a great deal more than any amount of sympathy; and I believe most assuredly that the officers of the Militia, Yeomanry, and the Volunteers have the power to help themselves, and especially so in both Houses of Parliament. I do not believe there is any profession or business in the country so influentially represented in both Houses of Parliament as the Militia, the Yeomanry, and the Volunteers. I believe, further—and with this I will conclude my remarks—that the Militia ought to have on the Head Quarters staff of the Army an officer of their own, or of the Volunteers, or of the Yeomanry, to represent them. I have often mentioned this to civilians in private life, and it is hardly believed that one-half of the land forces of the Empire—about 350,000 or 400,000 men—are absolutely unrepresented on the Head Quarters staff of the Army by a single officer of their own! Now, I do not want to have Sir Francis Grenfell removed, and if he were removed, no doubt another place would be found for him very soon which he would very worthily fill. I do not say that we ought to have a deputy adjutant-general placed above Sir Francis Grenfell, or whoever held the appointment; but I maintain we ought to have a man there of our own to represent the Militia, Yeomanry, and Volunteers. I will sit down by saying that the Militia, Yeomanry, and Volunteers have power to help themselves, and there is an old adage that “God Almighty helps those who help themselves.”

Major Theodore F. BRINCKMAN, 3rd Bn. The Buffs (East Kent Regiment):—I will only say a few words on the subject. We have all seen in the newspapers a great deal about the Militia, which I hope will attract the attention of the authorities. We have also had papers read, but nothing has been done. There are several things that might be done. In the first place, the recruiting system is wrong. From my experience of seventeen years in the Militia, I fancy that recruiting was stronger and better when we had the old preliminary drill. When we go to the depôt and see the recruits, we generally find them running about with coal scuttles. No interest is taken in them, as was the case when they were looked after by their own officers. There are very few of their own officers to look after them. The day before the training they come up as a body of men. One of the chief reasons why the Militia is not as efficient as it might be, is because there are only 28 days for training, and during that time 14 or 15 days are devoted to musketry; so that out of the whole of the 28 days the commanding officer has only 6 days left for drill. That, I think, is a great drawback. Why we are all dissatisfied about this is, that during a long period of years the authorities have overlooked the requirements of the Militia. Everything has been done for the Volunteers, but very little for the Militia. Until the authorities try to make the Militia more popular with officers and men, they will find the Force deteriorate, instead of coming up to the standard which it ought to reach.

Colonel M. MOORE-LANE (Lieut.-Colonel R.A., retired pay), Hampshire and Isle of Wight Artillery Militia:—I wish to make a few remarks on the artillery branch of the Militia, and in doing so I may mention that my Militia experience extends over a period of twenty-four years. I was first appointed adjutant, in 1873, of the Northumberland Artillery; then I was transferred to the “P.W.O.” Norfolk Artillery, served seven years, till I was promoted to field rank. I joined the Hampshire Artillery Militia as Major in 1887, and took over the command of the regiment in 1889, so that my experience has been rather long and varied. I should advocate that the artillery be given appellations in accordance with the positions which they now occupy—I mean by calling them the Southern Artillery, the Eastern Artillery, the Western Artillery, and so forth, doing away with county titles. I am now speaking entirely from an artillery point of view. I should certainly utilise the Midland Counties, which are not now called upon to furnish

any recruits for the artillery, and I would apportion these counties to the different units. I advocate this, because in these counties there is a class of mechanics, artisans, and miners which would form a very valuable addition to the artillery; I speak, of course, in general terms. The details could be easily worked out if such a scheme were approved. There cannot be the slightest doubt that the present strength of the Artillery Militia is perfectly inadequate for the duties required, and which it would be called upon to carry out in a national emergency for home defence. I entirely agree with Lord Raglan with regard to the enlistment for general service, and I only hope that, should it be carried out, it will do away with the Militia Reserve; because in that case it would enable the units to turn out effective, efficient, and strong when embodied, which they cannot possibly do now. Some drastic measures must, I think, be adopted in order to overcome the annual waste which takes place in regiments, and also the great difficulty now experienced in obtaining recruits. The causes may be stated:—1. The alteration in the class of recruits now joining the Volunteers; 2. The movement of the large number of the agricultural population into towns; 3. The inducements held out to men to re-enrol are not sufficient as regards payment of bounties. To induce a better state of affairs, I should suggest:—First, increased recruiting areas for artillery, as I have already mentioned. Secondly, I do not see why the present D Section of the Army Reserve should not be done away with, so as to induce these men who are now serving under that section to join the Militia, giving them a retaining fee of fourpence a day during such service. In that way you would obtain men in the prime of their lives—at the age of 30 to 35. Their service would be seven years in the Regular Army, five years in the Reserve at sixpence a day, and seven years in the Militia at fourpence a day, still of course retaining the voluntary Militiamen who now enlist at the age of 17. I should very much regret if the civilian element, which is now disappearing very fast, should disappear altogether. Thirdly, advancement of part bounty to old soldiers enlisting as formerly. Fourthly, I should certainly recommend that the commanding officers be held responsible for the strength of their regiments as well as for their efficiency. Give them a free hand as regards the disposal of their permanent staffs during the non-training period for recruiting purposes. I do not see that this would in any way interfere with recruiting for general service. In fact, I am sure it would not. I think a great deal more encouragement should be given to officers to join the various schools of instruction, and especially the course as regards artillery of "coast defence and fire discipline." If officers are recommended to attend such courses by their commanding officers, they should do so, receiving their pay and allowances. I quite agree with the last speaker, and I think what he brought out is very important. It is absolutely necessary at the present day that the Militia should be in far greater touch with Head Quarters and that we should be represented on the Head Quarters staff. I do not see why, in the first instance, an experienced Militia officer (there will be no difficulty in finding him) should not be appointed to the staff of the Inspector-General of Auxiliary Forces, and he would be there to advise and assist him in all matters referring to the Militia. At present I believe the staff of this general officer consists of a clerk and a messenger! I hope this matter will receive the attention of the authorities, because I think it is very important, and I think through this staff officer we might work and get something done outside these walls. As regards the annual training, I think a month is far too short for artillery, and I should certainly recommend that there should be an extension to six weeks of training, say every alternate year.

Colonel H. B. HANS HAMILTON, Northumberland Artillery Militia:—In following my friend Colonel Moore-Lane, and offering a few remarks with regard to the Militia of this country, may I be allowed to say, Sir, that I think we are fortunate in having here to-day Sir John Colomb, who championed our cause last session in the House of Commons; and we may also congratulate ourselves that Sir Francis

Grenfell is present with us. Their presence has, I think, added greatly to the success of our meeting. It is difficult not to go over ground that has already been traversed by previous speakers. I would mention one small point which seems to have escaped the attention of the officers who have spoken. By Army Order 278, of 1890, the orderly-room clerk was disallowed the right to rise in rank, as he is able to do in the Regular Service. I felt this to be an injustice in my own regiment, and I would suggest that this Army Order should be cancelled, and that in future an orderly-room clerk should be permitted to rise in rank, as he was able to do before the year 1890. Every now and then we find, partly owing to the absence of an experienced Militia officer at the right hand of the Inspector-General of Auxiliary Forces (as pointed out by the previous speaker), little things are put upon us, which, although small in themselves, are extremely irritating, and very discouraging to the individual immediately affected. I endorse most fully everything that has been so ably said by Lord Raglan and other speakers with regard to restoring warrant rank to regimental sergeant-majors, which warrant rank was discontinued by Army Order 396, of 1889. It is worthy of note, that this opinion as to the restoration of warrant rank to sergeant-majors is held by the officer commanding every Militia unit in the Kingdom. I must say I felt the change myself very deeply. The great responsibility of the position of regimental sergeant-majors in the Militia Service demands that they should have warrant rank. These are two apparently small matters, but still it is the number of such small matters which, when recognised by the War Office, and promptly remedied, greatly strengthen the hands of commanding officers, and which impresses all ranks that the authorities are anxious to remedy mistakes, and do justice to each individual. I would also desire to be allowed to suggest, in order to obtain thoroughly efficient Militia non-commissioned officers, that men, after completing their Army and Army Reserve service, should be encouraged to join the Militia, and remain in it until they reach the age of fifty years; and that these men should be granted a small pension of, say, sixpence a day for such service. This would rid the Militia Service of a difficulty and a weakness it is now suffering from, and would greatly add to the efficiency of each unit. I sincerely trust the authorities will see their way to initiate a scheme on these lines. Although the regiment I have the honour to command is complete in all ranks, and has been complete for a number of years, my experience tells me this cannot be attained without the officer commanding devotes some part of every day of the year in keeping himself in touch with the non-commissioned officers and men, and taking an individual interest in them and their families in their own homes during the eleven months of the non-training period. It has been suggested by Lord Raglan in his able paper that the Militia Reserve should be done away with, and the Militia enlisted for general service in case of war and national difficulty. In this proposal I entirely agree, and it is the vital point upon which all other smaller suggestions pale into insignificance. Why should not the old Constitutional Force be enlisted on a fair and honest basis, and in accordance with the modern requirements of our country? Under the existing system of enlistment, the Militiaman is bound only to serve in the United Kingdom of Great Britain and Ireland. Although he is so enlisted, the country expects him to volunteer in case of national danger, and every Militiaman would volunteer if such an event happened. I maintain, however, that it would be more satisfactory to all Militiamen to be placed on an honest basis, and enlisted for general service, than that they should be expected to do what they have not originally contracted to do. I say, from my experience of nearly twenty-eight years, that this great change can be brought about without the slightest friction, if it is done judiciously, and in consultation with a committee of Militia officers who have made the individual character of the men who enlist in the Militia, their study. I need not now explain the increased strength this change would bring to the military resources of the country. I can only trust that those responsible for the re-organisation of the

Militia Service on a modern basis, will not delay in considering this vital matter—vital, not only to the welfare of the country itself, but also to the Militia Service, in which we all take so deep an interest. With regard to the apparent inability in some parts of the Kingdom to recruit Militia units to their full establishment under the present Regulations, I would refer you, Sir, to the Official Returns for 1895. I find the Militia establishment of all ranks amounted to 134,872, “wanting to complete 18,329,” “less supernumerary establishment 1,246,” we have a total of 17,083 required to complete the establishment. We deduct, therefore, from 134,872, 17,082; this leaves 117,789 “enrolled.” We must also deduct from this latter figure (117,789) the number of men absent (with leave and without leave), which in 1895 I find was 13,725. We have, therefore, the total of 104,064 officers, non-commissioned officers and men. Of this number we have privates, gunners, and sappers, 90,265. Of this number the Militia Reserve comprise 31,498, who are liable to be sent to the Army; and we must, therefore, deduct them also, in order to obtain the actual number of the Militia proper available. This total only amounts to 58,767! When, therefore, under the present system, the Militia Reserves are called out, the Force is denuded of its best men and nearly the whole of the Militia non-commissioned officers! I do not think that the country appreciates at all that it only possesses 58,767 Militiamen, in the event of the Militia Reserve being called out. I have quoted these figures also to explain my proposal for recruiting the Militia up to its “establishment,” and, in addition, we have also to recruit men to fill up the places of those absent. These two figures, 17,083 plus 13,725, equal 30,808 deficient in 1895. My proposal is, that those officers commanding units, who *are* able to keep their units complete, should be permitted to recruit, first of number of supernumeraries equal to the estimated number of absentees, and secondly, that they should also be permitted to recruit as supernumeraries, say half the number of the Militia Reserves of this unit until the 17,083 required to complete is cancelled by an equal number of supernumeraries. At present, the Chancellor of the Exchequer has an establishment on paper of 134,872, and the country expects the authorities to provide this number; but the finance committee only estimates for 104,064 present at the annual training, and he only pays for this number. In other words, the Chancellor of the Exchequer does not pay for 31,808 who do not in fact exist in the form that they can be paid for. I maintain the military authorities are bound to make some attempt to make up this figure, and I believe the proposal I have made is the way to do so. The authorities do not seem desirous of increasing the establishment of any unit, wherever the officers commanding *can* provide the officers and recruit the men; although the Chancellor of the Exchequer is saving the expense of 31,808 men per annum. This seems a curious anomaly. Seeing these facts from the returns, viz., that the expense of 31,808 men was being saved every year, and that I found I could provide officers and men for an additional company, I applied for an additional company, but the authorities regretted they could not sanction it. The inference therefore to be drawn is, that either the authorities do not desire to increase the establishment, or that the Chancellor of the Exchequer does not wish to spend any of the money he is saving every year by the Militia force being 31,808 men short of the establishment. My proposal does not necessitate an increase of establishment. To each company you can add an equal number of the supernumeraries you have been allowed to recruit, without the addition of extra officers and non-commissioned officers. In the Militiaman the country possesses excellent fighting material, and he is the cheapest soldier I believe in the world. I have taken out the total cost of an Artillery Militiaman spread over the six years he is engaged for, and I find he costs the country £6 5s. 10½d. per annum. This figure includes everything, the uniform, rations, pay, and travelling expenses of a gunner in the Northumberland Artillery. Is it not worth the while, therefore, of the authorities to make some attempt to complete the establishment of the Militia, and enable the Chancellor of the

Exchequer to pay the amount the country expects him to pay, instead of his being obliged to estimate for some 31,808 short? I am certain from long experience and the daily study of the Militia force, the country possesses a splendid system; but that this system requires re-organisation on an honest basis, and in accordance with the extensive and extending dominions which Her Majesty's Forces in modern times are called upon to safeguard and to defend.

Lieutenant-Colonel OLIVER T. DUKE, 5th Bn. The Rifle Brigade:—We Militia officers are all greatly indebted to Lord Raglan for the immense amount of labour, trouble, and care that he has taken in producing his paper. We have heard eloquent speeches delivered as to the various wants of the Militia, we know the support that Lord Raglan's views have met with; and we must now ask ourselves, What is to be the outcome of it all? Is anything good to be hoped for from this great gathering? Is anything coming from the opinions that have been expressed? Is anything good to come of the plans that have been drawn out by Lord Raglan? I think that Lord Raglan puts in the wrong place the vital point of this paper. After giving us particulars of, and pointing out in detail the defects of the Militia: in the first place the deficiency of officers, with a statement of the plans he proposes for dealing with that evil; after stating that the question of instruction was very difficult, after noting the anomalous position of the commanding officer, after pointing out the grievances of sergeant-majors, and after reflecting on the status of Militia non-commissioned officers, he came to what he called the vital point of his paper. I think that vital point of the paper should have come first, for on it turns the whole question of the Militia. Lord Raglan says that the vital point is the question as to whether the Militia should be enlisted for general service in time of war. Major Holden in speaking just now laughed at the idea of invasion. I do not know whether the bogie of invasion, as it is called, has taken refuge entirely with the Militia forces and has been driven out from the United Service Institution. Admiral Colomb has done his best to drive it out, but I fancy that we Militia officers believe still in the possibility of invasion. We look upon ourselves at the present time as serving with a probability, or at any rate a possibility, of being called upon at some future time to resist invasion. It, therefore, seems to me that the point we have to get cleared up is, What is the position of the Militia in the scheme of National Defence, of which we have heard so much? We have been told by the Duke of Devonshire, speaking at the Guildhall, that Naval Supremacy is the first principle of Imperial Defence. Many long papers have been written on that small text, which it seems to me was totally misinterpreted. The Duke of Devonshire was speaking entirely in reference to our Colonies, and he said that the Navy had undertaken to render impossible organised invasion of our Colonies abroad. He said nothing about Home Defence. Admiral Colomb filled on this subject some pages of the *Times* with very eloquent writing, in which he laughs at all of us who have thought that invasion might still be possible. We noticed of late that the gentlemen, in discussing the political position, now commenced their arguments with the apologetic remark, "Of course, we do not believe in the idea of invasion; you must not suppose that we think that is possible." It was considered that all idea of invasion had been knocked on the head. However, Mr. Brodrick has, within the last few days, made a speech in the House of Commons, and has introduced a Bill which is to provide a large sum of money to be used for the defence of the country, in view of the possible occurrence of an invasion; it is evident, therefore, that the Government are in strong agreement with the views expressed by Lord Wolseley in Edinburgh, that invasion is possible. We have then to ask, What is our position with regard to the defences of the country? I think we may venture to take it that the views recently expressed detrimental to the Volunteer force are not acceptable to the country, that the country still considers it necessary to maintain the Volunteer force (Constitutional "Local Militia"), to promote its efficiency, to increase its strength, to perfect the details which have

already been worked out, with regard to the location of particular Forces in case of invasion; in fact, the country means to keep the Volunteer force, and does believe that it is required in case of invasion. What then, is the position of the Militia?—the “Regular Militia” of Constitutional History. I think that Lord Raglan has touched the vital point, when he says that it ought to be made effective as a part of the Regular Army, by being enlisted for foreign service in the time of war. We know perfectly well that all true defence must be of an offensive character, if it is to be effective; and, although it may be necessary to have a system of passive and immobile defence, the real policy for defending the country is an offensive-defensive system. We know that our Army is totally incapable of undertaking an offensive-defensive policy at the present time. We have that on the word of the Commander-in-Chief, and, practically, this view is accepted throughout the country; I take it that such is the acknowledged condition of things. But, if the Militia were drilled and trained up to the high level it ought to reach, in one moment, so to speak, our Army could be made fit to take up an offensive-defensive position. Now, if the country did accept that position, with regard to the Militia, it would naturally demand that the Force should be made fit for its duties, and then would follow the solution of the questions that Lord Raglan has insisted upon, officers would be looked out for and would be properly trained. I venture respectfully, to disagree with Lord Raglan’s idea, that all officers should go through the Militia. I would rather say that all officers should go through Sandhurst, before they are allowed to come into the Militia. We want more education for our officers. The country would see that the officers are properly trained, if it trusted the greater part of its safety to the Militia, while the commanding officers’ position would then be reconsidered. The sergeant-majors would be made contented. In fact, all the evils which Lord Raglan has pointed out would be remedied, if once our position in the defensive Forces of the country were fully recognised. In the very able paper read by Major Williams, in June last, he suggested that there was not a proper relation at present existing between the Militia and Regular Army; and many officers of great experience present at that meeting strongly upheld the idea that a Royal Commission should be asked for, to enquire into the position of the Militia, with regard to the defensive Forces of the country. I think if, as the result of this meeting, the authorities at the War Office and at the Horse Guards should come to consider the broad questions, not minor questions, as to whether a commanding officer is conveniently situated with regard to his men, but the broad question as to what is our position, that they will see that it is necessary to appoint a Commission to adjust our relations to the Regular Forces in carrying out an offensive-defensive policy. I hope that may be the outcome of this meeting—I trust that the authorities will see that we are asking for a broad consideration of our position, that we are placing ourselves at their disposal to carry out a great military policy, and that they will not despise our humble efforts.

Captain J. C. W. MADDEN, 5th Bn. Royal Irish Fusiliers :—With regard to the question of officers, I think that the lecturer has certainly hit the point. You will not get officers to fill the vacancies in the Militia unless you increase largely the number of candidates going through the Militia into the Army, or else do what has been suggested by the lecturer and make everyone go into the Army through the Militia. As to our present Militia officers qualifying as far as they can to make themselves efficient, I want to show how the authorities help us at the present time. First and foremost, take the Schools of Instruction. When we join the Militia first we are generally told by the adjutant that we must either go up for two months’ preliminary drill, or be attached to a Line regiment for two months before our first training. Then when we come up for training the colonel says, “You must go to a School of Instruction—that is indispensable”; and, if we do so, we go there without pay or allowances, and, of course, this prevents many from going to a School of Instruction who otherwise would. Captains of Militia are allowed

to go up from the 15th to the end of the month, but they have to get a field officer's certificate, and they have to do so without pay or allowances. That is wrong, and it is a curious anomaly that if you wait till you are a major, and go up then, you get the full pay and allowances of a major. It would be thought that it would be the desire of the authorities that every Militia officer should go to Hythe and qualify in order to be fit to instruct his company. On the contrary, when I joined my regiment for three years I applied to be sent to Hythe in the August course, as my work prevented my going up at any other time. In each case I was told, after sending in my application, to get my eyesight tested (this at my own expense). I did so, and then I never heard a word more about it. Personally, I think that the post of instructor of musketry ought to be done away with in the Militia, as it has been in the Army, and that captains of Militia should be compelled to go to Hythe and qualify themselves to instruct their own companies. I believe in that way you would get instruction in musketry much better done. For there is this curious fact, that at present a second lieutenant of two years' service may go to Hythe and get a certificate and be made an instructor of musketry, and then practically he is supposed to tell a captain of twenty years' service what he is to do with his company when it comes to musketry. That is altogether wrong. Now as to tactics. No facilities are given to officers to enable them to go up for tactics at present. I can only say that, in my own case, I applied to go up for tactics, and asked for leave to be examined in London. After about three weeks I was asked why I wished to be examined in London. I replied that I was living there, and could not go over to Belfast. Two weeks after that I received an order saying that leave was granted for me to be examined in London, and that I was to find out from the D.A.A.G. for Instruction the time and place. I could not go to the Horse Guards that day, but I went the next, and was told that the examination was over. That is not the way to encourage Militia officers to go in for the various certificates. We cannot, as the lecturer very forcibly said, be always sitting on the doorsteps of our orderly-rooms during the non-training period waiting for orders. I should like to back up what has been said by others—that it is most important that sergeant-majors should have warrant rank. I think it is a great injustice taking it from them. If any friction was caused at dépôts by sergeant-majors of Militia having warrant rank, surely either a dépôt sergeant-major could be made to rank senior to battalion sergeant-major, or the dépôt sergeant-major could be done away with; and the senior sergeant-major of Militia, having headquarters at the dépôt, could carry on the duties of dépôt sergeant-major during the non-training period; and during the twenty-seven days he has to be away with his regiment a colour-sergeant could do those duties. That would get rid of the dépôt sergeant-major and his expense, and would give employment to the Militia sergeant-major during the non-training period. Now as to what has been said as to N.C.O.'s. I had the pleasure of being attached to the 4th Battalion King's Liverpool Regiment during the manœuvres at Aldershot last year, and I found two corporals short in my company. There were no lance-corporals, as no one would take the post. I picked out some of the best men, but they refused to become corporals. I then told the colour-sergeant to bring me any man who would take the post. He brought me three of the youngest boys in the company. One of them looked about seventeen years old, and I told him to go back and grow. The other two had to be made corporals, and they were no use after they were, for they had no authority at all with the men. If boys like that attempted to talk to older men than themselves—men who had probably been in the Army—they would not be listened to. That was the case all through with the non-commissioned officers in the Militia. You cannot get good sergeants, as you do not pay them well. For 3d. extra a day a good man will not take the responsibility of corporal, and the risk of unpleasantness after the training if he does his duty. I also feel strongly that commanding officers of Militia should be given power to reduce to the ranks sergeants or corporals found to be of no use. At present, you

have to wait till a N.C.O. commits himself, as you cannot court-martial him for stupidity. There was one case, I may mention, that occurred at Aldershot. I had a sergeant who was perfectly useless, and I should have called him a bad private in the ranks; but he could not be got rid of. At last he got drunk, and the colonel at once had him tried by court-martial, and he was reduced to the ranks. Now, there should be no necessity to wait for this. I think it would be a great advantage if Militia N.C.O.'s could be promoted to the permanent staff, if they were really good. It would help us to get the right class of man. I forgot to say one thing I wanted to about the officers. If the authorities bring into the Militia a large number of half-pay officers from the Line to fill up the list of captains, when a vacancy occurs for a majority or a lieutenant-colonelcy these officers ought not to have the preference over purely Militia officers because they have been in the Army, and perhaps seen service. To give them such preference would, in my opinion, be unfair, and prevent many men from accepting a commission in their county regiments. Now as to men. The authorities seem to do one thing or the other—that is, they either always leave you at your headquarters, or else they always send you away to large camps like Aldershot; and neither of these things is good for the Militia. If you always send a regiment away from its headquarters it is bad for recruiting, and if you always leave it there it is bad for efficiency. During the manœuvres last year, on account of the wet and hard work, I heard many men say, "This is not good enough"; and I have no doubt, if the same regiments were sent to manœuvres again this year, it would be bad for their recruiting. The question is, What ought to be done? One year a regiment should be kept at its headquarters, and every now and then, say once in two or three years, sent to manœuvres, or brigaded with other regiments, otherwise it cannot be efficient. In the case of my own regiment, for twenty-one years we have never been moved away from our headquarters, and have never seen a regiment alongside of us. That, I think, is wrong. For sixteen years we were always in barracks and billets. Suddenly, in 1893, it was found out that there was a good camping ground about a mile from headquarters, and there we have been encamped ever since. Now we have been ordered to give up the range; and judging from past experience, we shall train away from headquarters for some years to come. I do think this happy-go-lucky policy is not the most suitable for the Militia. There is one thing I would say most strongly before sitting down, and that is this: the great point in Lord Raglan's lecture is his recommendation to do away with the Militia Reserve, and enlist Militiamen for general service. This is a most important matter for the Militia, and should be inquired into most carefully, and, if possible, carried out. It is an extremely unfair thing if, whenever a row occurs, all our best men and non-commissioned officers are to be taken away and sent to the Line. If the authorities will insist on retaining the Militia Reserve, let it be done in this way: When, for example, a hundred men are wanted to reinforce either the 1st or 2nd Battalion which is at war, let the colonel of the Militia battalion they are to be taken from tell off three officers to command them; and then, I think, both officers and men will be able to give a good account of themselves when they get to the Line battalions. The best thing to do, however, is to do away with the Militia Reserve altogether, and enlist for general service; and to use the money you will thus save by either increasing the present bounties, or in some other way for the benefit of the Militia. When a man engages at the present time to go into the Militia he does not think, nor does he care, whether it is for general service or for service in this country only. What he thinks is: "What bounty am I to receive at the end of my training?" "What pay am I to get?" and "Am I likely to have a good time with my regiment while I am away?" If these three things are right, he will join. I can only say that I believe that, if the authorities adopt the changes recommended by Lord Raglan in his lecture, which practically represents the feelings of the vast majority of Militia officers on the subject, they will greatly benefit the Militia Service, and

will find in time of need that they have in the Militia the very finest Reserve for the Army that can be maintained on so small an expenditure.

Colonel JOHN DAVIS, A.D.C., 3rd Bn. The Queen's:—I should like to take this opportunity of offering my grateful thanks to Lord Raglan for the extreme care and attention that he has paid to this very important subject, and for the excellent paper that he has brought before us. I know somewhat of the trouble of getting up a paper of this kind, for some years ago I was much struck with the importance of endeavouring to increase the ranks of the Militia, and I wrote a pamphlet, which I intended to send to all the great employers of labour, asking them, instead of depreciating the Militia or hindering Militia recruiting, to help it, in order to enable the Government to get a much larger Militia Army; which I thought then and still think, at a time of great national danger, is wanted. I cordially agree with nearly all the points that Lord Raglan has brought out. There are one or two other points I think that we ought specially to consider. Of course, the two main points are the deficiency of officers and the deficiency of the men; and our attention should be especially and earnestly directed to the removal of those two grim defects. I believe the remedy for the deficiency of Militia officers would be the raising of the status of the officers by making them liable for service in case of any great national emergency. I am certain that the gentlemen of this country who would then be drawn to the ranks of the Militia would not like to join a Force in which there would not be an opportunity given them to distinguish themselves before the enemy. If the Force were rendered liable for foreign service, I am convinced from what I have heard from gentlemen in all parts of the country that the Militia officers' ranks would be complete. With respect to the men, I think that something should be done, when they are brought out of civil employment, to house them and feed them better. Of course, a Regular soldier is comfortably housed in barracks. A Militiaman whenever he comes out, whatever the weather is, has to go through the whole of his training in the discomfort and the trouble of a tent. Regular officers may say, "If you give them any better conditions of service in the camp, it is not service conditions"; but I submit that when the Militiaman comes out he ought to be made more of than he is, and ought to be given better accommodation in the camp than he has at present. I think if this were done it would very much help our recruiting, and would help to make the Militia much more popular with the class which we wish to recruit from. Then I think a little consideration should be given in order to ascertain whether something could not be done to again attract to our ranks the old civilian element. When I joined the Militia, and got command of my company, I was immensely proud, and took every opportunity of showing the inspecting officer how many chevrons I had of re-engaged service in my company. There are very few re-engaged men now, I am sorry to say, and that is an indication of how the proper men in the Militia do not re-engage. I would submit to the authorities, whether something might not be done in the way of an extra gratuity for every re-engagement, or some medal or ribbon that a man might show to his friends in civil life when he returned, to indicate that he had done a long service in the old Constitutional Force, and had earned honour and reward. I think that is really worthy of the attention of the authorities, and I believe it would very much tend to attract again to our ranks the good old-fashioned Militiaman, who would be proud to carry his four or five chevrons for long service on his sleeve, and carry into civil life by a long-service medal some indication of his value in the tent. With respect to the general service of the Militia, there is one thing I have always taken much interest in, that is the musketry. I am afraid it is too late to touch upon that, but I believe if we could get the financial secretary to sanction the expenditure to extend our service another week, so as to give the very important subject of musketry instruction a more extended service, it would be of an immense advantage to the Force. I trust, and I believe, that the authorities are turning their

attention to the subject, and I hope the time for service may ultimately be extended. I thank you, Lord Raglan, for your paper, and hope sincerely that the good work you have done will bring its reward to you and to the Service.

Major L. W. PEAD, 3rd Bn. The Royal Fusiliers :—I will only detain you a few minutes ; it is now very late, and most of the wind has been taken out of my sails by other speakers. If soldiers of the Militia enlisted for service abroad, it would be a first-rate thing for the Service in every way. I am certain that three-fourths of the men in the Militia do not know that they are not liable to foreign service. As far back as 1871, I remember a Militia regiment going to the Autumn Manœuvres, and the—

“ Women are weeping and wringing their hands

For those who would return at the end of a month.”

I asked a colour-sergeant what was the meaning of it all, and he said to me : “ The fact is, that half the men think that ‘ Autumn Manœuvres ’ is the name of some foreign country where they are going to fight the enemy.” Then as to some permanent service for Militia officers, I think it is a grand idea that Militia adjutants should be appointed from the Militia itself. The duty of adjutant is no longer scotching up the colonel when he slips his duties or drill and office routine. I know that there are plenty of officers of Militia capable of taking adjutancies. They might hold them for five years, and, if the colonel approved, another five, and so on. I also think that officers of Militia should have to pass the same examinations before promotion to the rank of field officer as the Regulars have to pass for their rank of field officer. I am certain that if encouragement, instead of discouragement, were given to those officers who have done it—there are only about twelve in the whole Service—other officers would follow the example. Or it might be minimised in this way: let officers pass the same thing as the Regulars in tactics and in military law, and let them know enough field fortification and enough topography to enable them to understand the works they would have to throw up ; and to read maps used in tactics. I think Lord Raglan’s idea of passing all officers through the Militia into the Regular Army is a very grand one, and I do not understand how it would do away with Sandhurst—I think it would rather glorify Sandhurst, because I understand that all officers, after obtaining admission to the Militia, before being transferred to the Regular Service, would have to go through the usual course of artillerymen and engineers at Woolwich, and of linesmen at Sandhurst. I am sure we should all be extremely grateful to Lord Raglan for having so thoroughly thrashed out this subject, and for what we have heard from those officers who have come here and thronged round him to-day. It shows us that although some may think that the Militia is a moribund Force, there is plenty of life in the old dog yet.

Lieut.-Colonel ROBERT ap H. WILLIAMS, Royal Anglesey Engineer Militia :—

With regard to the dearth of officers in the Militia, I think Lord Raglan, in his able paper, has omitted to mention that some of the few inducements to officers to join the Militia that formerly existed have been taken away. One rather considerable inducement was, in old days, to exempt Militia officers from serving the office of High Sheriff. There are many men, even of large means, who particularly dislike that office, and who would join the Militia, and stick to it for a long time, merely for the purpose of escaping it. In my own case, after I had been in the Militia a good many years, I pleaded the old excuse that the Militia were exempted from serving the office of High Sheriff, but I was told that that exemption no longer existed ; and I had to serve the office of High Sheriff, just as if I had not already served my country to a considerable extent, though in a different way. With regard to officers going through courses of instruction, I venture to say that, if you will only have your courses of instruction at times of the year which are convenient to the officers, and pay their out-of-pocket expenses, there is no number of courses of instruction which you may impose upon them that they will not cheerfully go through. In my corps of Engineer Militia there are only two times when such a

course is open. One of these begins in April and lasts six weeks, and the chances are that the course is not over before the regiment goes out for its training. The only other time when the officers can go up for a course of engineering to Chatham is the 1st of September; and in the case of many who are country gentlemen, there are other attractions in the country at that time which they hardly choose to give up for six weeks. With regard to foreign service, I have talked to many men in the Militia, and I have never found one who was not ready to go abroad in time of war, and who would not take a pride in going along with his officers. The general opinion was that the Government ought to provide for their families whilst they were away, and that if a man did not wish to go abroad he should join the Volunteers. With regard to the status and quality of the Volunteer non-commissioned officers, I may say that during a service of a good many years as a subaltern or a captain of a company, I found that there often was an amount of *esprit de corps* and zeal amongst them which simply amazed me. If you took them in the right way and encouraged them with a little praise and commendation, they were generally anxious to improve themselves. They then found that they were looked up to by the other men, and they were really very useful. In my company, on more than one occasion on parade, when none of the sergeants, either staff or Volunteer, were present, and the only non-commissioned officers were the corporals, I have found that the work was well done, and that there was thoroughly good steady drill. Still, if you want to make sure of getting good non-commissioned officers for the Militia, you must pay them a little better than at present. Their work is much harder, and their pay ought to be as good as that of the non-commissioned officers in the Regular Army. Indeed, I venture to say that, not only ought their pay to be as good as that of the other non-commissioned officers, of their own rank, but the bounty they receive at the end of each training ought to be a great deal higher than that of the ordinary Militiaman. If there is to be an improvement made in the efficiency of the Militia, I suggest that it should not be done by lengthening the annual training. In our regiment we find that six weeks' training is as long as the men can be spared from their civil employments. There is already a difficulty to get men to join the regiments, and more of them would require to be excused if the training were increased. But I think you might with advantage lengthen the preliminary drill by a couple of months at the beginning of the year, when the days are still short and work is rather slack. The recruits would then be better grounded in musketry and field fortification, and when they came out for their annual training there would be no danger that they would ever forget what they had then learned.

Colonel J. MOUNT BATTEN (Brev.-Major, retired pay), 3rd Bn. The King's (Liverpool) Regiment :—I wish that the debate could have been adjourned for one week, and the lecture circulated amongst commanding officers of Militia, with a view to more extensive debate on the subject. With regard to the making of non-commissioned officers of Volunteers, officers commanding regiments know very well the great difficulty there is in getting privates to accept stripes. A previous speaker has told you the experience he had when attached to my regiment at Aldershot. One reason is that in a local regiment, such as I have the honour to command, the men and non-commissioned officers are thrown together so much during the non-training that a small or weak man is afraid to take the stripes and do his duty. It seems to me there is one simple remedy for that, and unless there is some very strong constitutional reason why that remedy should not be applied, I see no objection to it. Why should not non-commissioned officers and men be under the same law (the Army Discipline Act) as officers are all the year round? Then, if a private during non-training uses violence to a non-commissioned officer, he could be taken before the magistrate and sent to the depot to be tried by court-martial for conduct prejudicial to good order and discipline. It would be a great help to obtaining good non-commissioned officers, if we were assured that they would be protected during non-training. It applies much more

in large cities, where many Militiamen live in one town, even in one street, and work at the same trade, than it does in a county, where a non-commissioned officer may be at one end of the county and a private at the other end. Many suggestions have been made with regard to improvements, but most of the suggestions I see carry with them an idea of extra expenditure. I am very much afraid that we shall find, when we go to the Treasury, that it is a dry pump, and that we shall get nothing out of it. We should, therefore, confine ourselves as much as possible to using the material in our hands, and endeavour to make practical suggestions without touching the pockets of the taxpayer. I think a good deal of the cause of the trouble of getting officers to join is, that the Militia are always under canvas. That we should go under canvas once or twice in six or seven years is reasonable, and very advantageous; but to be continually under canvas, whatever the weather is and whatever the time of the year may be, is, I think, bad for the recruits and officers, and we could carry out discipline much more perfectly if we were in barracks.

Colonel J. BONHOTE (late Lieutenant 84th Regiment), 3rd Bn. Royal West Kent Regiment:—I desire to accentuate one point that does not seem to me to have been sufficiently brought out, although it has been mentioned by several speakers; that is, the great importance to the Militia that, if possible, the period of training should be lengthened. It is a moral impossibility to do effectually in twenty-seven days the work that we strive to do. It is a perpetual striving after the unattainable. I thought it my duty officially to request this year that my battalion might be granted an extra week's training; but this was found impossible for financial reasons. I believe that the matter was looked upon chiefly from the point of view as to whether the extra expense would bring adequate additional value in the shape of recruits for the Regular Army, the question of the increased efficiency of the Militia battalion being apparently regarded as a quite subordinate consideration. I do not mean to say that the authorities do not *at all* look at that point; but I think it deserving of their *first* consideration. With regard to the rest of the lecture, I thoroughly agree with Lord Raglan on all the main points, and I am sure we owe him a great debt of gratitude for the suggestions he has brought forward, especially the point of making the Militia available for general service. I desire to add my voice to that of other commanding officers in thorough approval of that suggestion, because I am sure it would tend to raise the status of the Militia and to increase its efficiency and popularity.

Colonel F. G. D. WATSON (Late Isle of Wight Artillery (Southern Division R.A.):—I did not intend to say anything to-day, but for the remarks of the gentleman on my right about wishing the regiments not to come out every year under canvas. A good deal is to be said for and against it. There is no doubt that discipline can be kept up as well under canvas as in barracks, but we should bear in mind that Militiamen come out for twenty-seven days in the year, or six weeks at the outside, and have to give the remainder of the year to their own work. We have no right, I think, to sacrifice their health, or to run the risk of sacrificing it, by bringing them out at uncertain times of the year and putting them under canvas so that they run the risk of getting rheumatism and other things, and so incapacitate them from doing work during the remaining eleven months of the year. I felt it strongly in my own case when I commanded a regiment in the Isle of Wight. We were brought out under canvas every year. The men never grumbled, but still I think it did interfere very much with recruiting. I applied through the Southern District at first for huts, mentioning certain huts that were in existence in the Woolwich marshes, and not being used. I was told that there were no huts. After correspondence for about a year and a half, I managed to get an interview with Lord William Seymour, and directly he saw me coming into his office he said: "I know, Colonel, what you have come for; you have come about those huts." "Yes, Sir," I said, "I am; and I am going to get them." They were promised. I went away, and within a week the huts began to arrive, and the recruiting increased at once. Instead of the men

being brought out under canvas, they were kept from the inclemency of the weather. You cannot treat a Militiaman who only comes out for six weeks as you treat a Regular soldier who is out all the year round. I do not wish to occupy your time further, except to tender my thanks and the thanks of every Militia officer present to Lord Raglan for his very excellent lecture. I only hope that the result of it will be for the good of our Force.

Colonel LONSDALE A. HALE (late R.E.):—Might I ask Lord Raglan kindly to give us a little explanation with regard to his proposal, which has been received with unanimous approval, that everybody should go through the Militia? This is a big scheme. At present candidates can enter the Army either by obtaining through commanding officers of Militia a commission in their battalions; or else without asking a favour from anyone, they can simply go up to the ordinary examination at Sandhurst; they do not want nomination from anyone. These are the two roads into the Army; colonels of the Militia hold the gates on one; on the other the doors stand always wide open. Are you colonels going to say, "Nobody is to come into the Army except on our nomination"? That is rather a difficult point to get over. If everybody is to go through the Militia, who is to give the commissions? And are we to have an increase in the officers of the Militia, so that the large number of candidates now going up for Sandhurst can all receive commissions in the Force? I should be glad if Lord Raglan would also say what sort of an examination they would undergo in order to enter the Militia. When is the examination they now have—the literary examination—to take place?

General Sir WILLIAM GORDON CAMERON, K.C.B.:—I was anxious to hear the views of the Militia officers themselves, and therefore postponed saying anything on the subject of this valuable lecture until they had all spoken. For this, however, there appears no time; but perhaps the chairman will permit me a few remarks before we separate, as having commanded the Northern District prior to its partition, and containing forty-nine Militia battalions or corps of all arms, numbering over 40,000 men. Of these forty-nine battalions, I inspected, in most cases every year, all but two of them which trained outside the district, devoting considerable time to each. When commanding at Shorncliffe, and as an Aldershot brigadier, it was also my endeavour to see as much as possible of the Militia, so I ought to know something about the Service, the great importance of which in the defensive system of our country has been so strangely overlooked for many years. I have listened with very great interest to all that Lord Raglan has told us, and as far as my experience goes I think I can endorse nearly everything he has said in regard to the defects requiring remedial measures, especially the lamentable deficiency in the number of officers, and their want of sufficient training both in the higher and lower ranks. When inspecting a Line regiment, and calling out subaltern after subaltern, I have always made it my duty to ascertain whether they came direct from Sandhurst or from the Militia. Though taking the greatest interest in the Militia (indeed, I defy a Militiaman himself to feel a keener or more lively interest in its welfare), I must confess that under the present system the young subalterns I refer to were very indifferently trained, and I think you will find that most commanding officers of Line regiments generally have to send these officers to what is called recruits' drill. That only proves the necessity, as Lord Raglan pointed out, of a greater amount of training. With regard to passing all officers through the Militia into the Line, of course there is what Colonel Lonsdale Hale has pointed out for our consideration, and there is also the fact that the country now demands open competition for commissions in the Regular Army, and you have to secure this open competition. As far as I can understand, if the whole of the candidates for the Army were passed through the Militia, you would not have such open competition, and you would not have that much higher education that is demanded by the whole military world in these days. Proficiency does not mean nowadays just knowing one's little bit of drill and the mere elementary part of the business. It is demanded

now from every officer that he should be a thoroughly efficient leader of men on a European battle-field. The little bit of drill is only the instrument : it has to be practically applied. The military profession now demands very high qualifications. Ask our Continental neighbours what they have to say about it. Ask any of the military *attachés* here what their officers and soldiers have to do. It is a very big and serious affair. I quite agree with Lord Raglan as to the additional training-time required for young Militia officers, and that they ought also to be attached to a Line regiment for two months. We constantly attach Militia and Volunteer officers to Line regiments, but they learn little or nothing from the ordinary routine. The only thing is to insist upon their being attached to companies going through the "annual course of military training." That is the only way in which there can be any training worthy of the name, and it is no use attaching officers on any other system or at any other season of the year. The difficulty is the interruption to the course of study to prepare for the literary examination. At this late stage of our proceedings I will only venture to refer to one or two other points in the lecture. With regard to the subject of warrant officers, there was this difficulty. It was found in a great many instances at the depôts, that unless the dépôt sergeant-major, who presides at the sergeants' mess, and is largely responsible for drill, discipline, and general good order in barracks, was placed in such a position that his authority was unquestionable over the other staff sergeants, everything went wrong. I think it is admitted in the lecture that it would be necessary to give the dépôt sergeant-major some status which would render his position absolutely supreme, and this is not so easy if all the Militia sergeant-majors were also made warrant officers. With regard to Militia non-commissioned officers, what has been stated as to the difficulty of getting them to serve, or getting them to exercise discipline, as discipline ought to be understood, is perfectly true. Instances have been brought to my notice over and over again of these non-commissioned officers being assaulted when the training was finished by the men they had been the means of punishing. I was in hopes this practice had died out very much in the Militia—in fact, that it was a thing of the past. A fellow who does such things should be taken before a magistrate at once ; for if there is anything, not only unsoldierlike, but altogether un-English, it is paying off old scores in this fashion ; and it certainly ought to be put a stop to. I do not suppose there is any law to reach those men now.

Lord RAGLAN :—Only the law for ordinary assault.

General Sir WILLIAM CAMERON :—With regard to the general Service question, I quite agree with several speakers that a very large majority of men would have no objection whatever ; but then, how would this work with the ballot, which, of course, is a form of compulsory service ? Would there not be an objection to enforcing the ballot if the men were enlisted for general Service, and liable to be sent abroad ? Would there not be some little constitutional difficulty in the way ? And would those Militia battalions remaining at home in war-time, as part of the Home Army we are so concerned about, really gain much, if anything, as regards the supply of men to the Regular forces at the seat of war ?

Lieut.-Colonel Lord RAGLAN :—I find myself, thanks to your kindness, in the happy position of not having many criticisms to answer. It is a source of the greatest possible pleasure to me to find that the suggestions I have put forward meet with the practically unanimous approval of the Militia officers present. At this late hour, therefore, I will not detain you long, and I will only briefly allude to anything not mentioned in my lecture. Colonel Howard said that 16 was too young for officers to join the Militia. Possibly, 16 is too young ; but my object in suggesting that the age should be lowered was, that officers should not be too old when they join the Regular Army. The younger a boy joins the better. You want him to enter the Army between 18 and 19—and if he has to do one or two years previously in the Militia, he must join the latter soon after he is 16. Colonel Howard also said that the Volunteer N.C.O.'s did not have hard work, as they did not

know their duty, and, therefore, could not do it. They have a good deal of sentry-go and piquet, and also as orderly N.C.O.'s, who have a great deal of running about, and I think that their work is hard. In my own regiment—which is an Engineer one—the work is so hard that they do not get to the works nearly as often as the sappers; and as regards the corporals, what they lose in working pay is not much more than made up to them by their extra pay as corporals. I dare say Lieut.-Colonel Williams can confirm me in this. I was exceedingly glad to hear Colonel Man—who has been supporting the Empire abroad so long—agree so thoroughly with me, as he has had more opportunities of viewing matters from the outside than most other Militiamen. Sir Francis Grenfell says that the dearth of officers is not so bad as it looks, as there is a dearth of men to correspond, which is like saying that two wrongs equal one right. I do not think we can be expected to agree with this. He also says that my proposals would do away with Sandhurst. I cannot understand why the highest military authorities seem to think, that under no conceivable circumstances, should Sandhurst be touched. As a matter of fact, I have never proposed doing away with it. I am sure we are all very glad to hear that ten annual commissions are to be given in the artillery. This is not a very great step, but it is one in the right direction. The commanding officer's position will not be rendered much more lucrative by the granting of travelling allowance twice a year to see his recruits; but I welcome this as the recognition of a principle. I may have exaggerated the practical effect of the position of the commanding officer; things run fairly well when they are carried out by English gentlemen, who have usually tact and *savoir-faire*; but I do not think it is right that our military system should be based on the idea that you will have archangels to carry it out. Regulations should be constructed for ordinary human beings. I am not a commanding officer, I occupy a position of greater freedom and less responsibility, as a distinguished statesman said. I can speak the plainer, and I must say that personally I should feel it exceedingly disagreeable to owe the privilege of seeing my own recruits to the good feeling of my own adjutant, or even of the colonel commanding the dépôt. The country ought to put its hand into its pocket and give the C.O.'s a little money. You would not require much; suppose you gave a C.O. even as much as £100 a year, that would come to only £16,000 for the whole Force. The Commander-in-Chief could then say to an officer, "I will put you in command of a regiment, and will give you this allowance, which will be ample for all purposes. I do not care whether you visit your recruits once a day, or once a week, or once a year, but I shall hold you responsible for the efficiency of the regiment." At present there is no responsibility at all for recruiting and drilling men, and for obtaining and instructing officers, or for anything else whatever. If an inspecting officer says that a regiment is bad, the C.O. would be justified in replying, "I have nothing to do with obtaining or drilling either officers or recruits; the regiment was handed over to me 25 days ago, and I have only seen it together three times since then; how can I be responsible for its efficiency?" That is the actual position of a C.O., and some change is necessary, if you wish to get the best results from the Force. With regard to signalling, I do not see any difficulty in having some men trained for the purpose in every regiment. I do not say it is a very important matter, but I think time could be found, in the case of men previously acquainted with signalling, to keep them fairly well up in the knowledge they have, and they might perhaps be excused musketry for the purpose. Sir Francis alluded to the fact that a bad character can be discharged at any time; but the necessary application to the general commanding the district causes great loss of time. I can mention a case in point, which occurred when I was commanding a company. There was a man in it who had committed every sort of atrocity, and finally departed for a fortnight's imprisonment. He had no bounty to come to him, and his kit was complete, so we made a special application to discharge him. As Sir Richard Harrison knows,

the number of days it takes to communicate between Monmouth and Devonport is extraordinary ; so to our intense horror, the man came out of prison before we got leave to discharge him. In these matters the general must of necessity go on the report of the C.O. What is the use, therefore, of bothering him with them? Why should not this power be delegated to the C.O., who would have his hands freed without detriment to discipline? while the general would save much time and attention, which could be devoted to more important matters. Major Brinckman has alluded to the question of fatigues at the dépôt, and to the recruiting being bad ; as I did not deal with these points in my lecture, I will merely say that I agree with him in everything that he said. Colonel Moore-Lane made the excellent suggestion, that Section D of the Army Reserve should be abolished. I am speaking from memory, but I think that if the returns are studied, it will be found that when Section D is open the number of old soldiers in the Militia falls, and *vice versa*. Therefore, if Section D was abolished, and the encouragement to enlist into it transformed into an encouragement to enlist in the Militia, it would be an excellent thing. The same may be said of Colonel Hamilton's proposal to enlist men over the strength, if a regiment is full. Lieut.-Colonel Duke made a most pertinent remark. He asked, what good will come of this discussion? I believe it would do some good if a Commission were appointed to enquire into the state of the Militia. I do not think a Commission often does much good, but it would be better than nothing. Captain Madden said that half-pay or retired officers of the Army should not be put into Militia regiments over the heads of the civilian officers. That is a question that wants careful consideration, as civilian officers should receive every encouragement. I am glad to know that Lieut.-Colonel Williams, coming from the Anglesey Militia, confirms my opinion of the extraordinary excellence of the Volunteer N.C.O.'s in the Engineer Militia. I put this down to the extra pay they get—it is not magnificent, but it is decent, a sergeant gets 2s. 7d. and a corporal 1s. 5d.—and if it were possible to improve the pay of all non-commissioned officers, the result, I believe, would be the same as in the engineer branch. When I commanded a company, I had four as good Volunteer sergeants as I wanted to see. Besides being decently paid, our sergeants have a very comfortable mess, and they are supported and made as much of as possible. I should like to thank Colonel Mount Batten for suggesting that all Militiamen should be under the Military Act all the year round. I think this would be a most excellent thing. Colonel Lonsdale Hale asks me how I would find vacancies for all the Army candidates. To begin with, I see that in January, 1897, there were 548 subalterns short in the Militia. If you raise the subalterns to two per company—which assuredly should be done, if A company requires two, why should B company have only one—this will require 594 more. I find besides that 25 or 26 Territorial Regiments have no 4th Battalions, which were part of Lord Cardwell's scheme in 1870, which has never yet been carried out. For these 4th Battalions you would require 374 more subalterns ; so that I make the total deficiency 1,516 subalterns.

Colonel LONSDALE HALE :—I worked it out this morning from the October list that there are 518 subalterns short.

Lord RAGLAN :—Suppose you raise the number of subalterns per company to two, which is what they ought to be.

Colonel LONSDALE HALE :—It was merely to know who was to have the nominations.

Lord RAGLAN :—I fancy that 1,500 vacancies would absorb all the boys who are cramming. I have no means of knowing how many they are. Colonel Lonsdale Hale puts before us the point as to how the nominations are to be arranged. My answer is, that either you want officers in the Militia, or you do not. If you do not want officers, it does not matter ; if you do want officers, the only way to get them is to make all officers go to the Army through the Militia—there is no other way to get them, I am certain. How to work it out in detail, I am not ready to lay down at this moment. Sir William Cameron also alludes to

that sacred subject Sandhurst. I do not propose to do away with it. I think that every officer of the Army, after going through the Militia, should go through a course at Sandhurst. He also alluded to the difficulty of enforcing the ballot, if the Militia was liable to foreign service. I do not see why that question should be raised while the ballot is not in force. When the ballot is enforced, it will be for the country to decide whether the balloted men will be liable to foreign service or not. My impression is that if the ballot was in force for a local Militia (and having compulsory service you could then pay the men what you choose), you might then, by a small bounty, induce them to transfer their services to the Regular or Active Militia. I beg leave to thank you all very much for the kind consideration with which you have received my lecture.

The CHAIRMAN (General Sir R. Harrison): At this late hour it will be unnecessary for me to make many remarks. I believe it is usual for the chairman to wind up the discussion, gathering the threads together and embodying all that has been said by the various speakers. I was prepared to do this and to make some general remarks on the whole question; but, as time presses, I will ask you to excuse me. I should like, however, to say one thing: that in all questions of organisation, especially when it comes to a matter of reform, it is exceedingly important not to deal with the question piecemeal, but to deal with it as a whole. If you begin to pull to pieces one portion of a machine, you are liable to get another part out of gear, and the machine then ceases to work smoothly and well. I have thought for many years, and I think still, that in our Army we are badly in want of some system which shall find out where reforms are required, and then go carefully into the question and see how they can be carried out. This is a very large and important question that might well be debated in the hall. I am not going to dwell upon it now, except in its application to the Militia. Improvements may be suggested (as they have been suggested this afternoon), and may seem not only necessary, but feasible, in one branch of the Service; but when you consider them in relation to other branches of the Service, you may find that they are no improvement at all. I cannot illustrate what I have said by an example from the Militia, because there have been so few, if any, improvements made in the Militia for many years past; but I can give you an illustration which has been alluded to in the lecture. Lord Raglan says that "the Volunteers have for many years failed to obtain their recruits from the middle classes, and have, if I may say so, poached on our preserves—the labouring classes." Here is a case in point: the Militia have always, and do still, obtain their recruits from the *labouring* classes—the agricultural labourer, the town labourer, the mines labourer, and so on. The Volunteers, if they do what they were intended to do, recruit from a different class altogether; they should recruit from the mechanics, shop-keepers, clerks, and the like—the great middle class of England that has made England what it is. I believe that Lord Raglan is perfectly right here. I have heard it stated in many quarters that the Volunteers, instead of enlisting from their own field, are poaching on the recruiting field of the Militia. That must do the Militia a considerable amount of harm. That one illustration (and I could give you a great many more) shows how necessary it is to consider these questions *as a whole*. Now, in what I have said I don't want to run down the Volunteers or their system. I believe that the Volunteer, the Militiaman, and the Regular soldier each and all have their place in the defensive machinery of Great Britain—in fact, that our voluntary system cannot get on without all of them. But it is absolutely necessary in administering these Forces never to forget the peculiarities of each, and never to allow one to injure the other. I will not trouble you further. We have had an able and somewhat long discussion, and we might probably have carried it on through to-morrow; but I hope sufficient has been said to show the authorities what an exceedingly important Force the Militia is, and how necessary it is to do everything possible for it, to improve it, and bring it to its proper position in the Army. Lord Raglan has,

no doubt, done many good things in his life ; but, as far as we are concerned, he has done two very good things : First, he has set an example to English gentlemen by joining that Constitutional Force, as it has been called, the Militia ; secondly, he has come here and given us an extremely interesting lecture. I will say no more, than to ask you to thank Lord Raglan and all who have taken part in the discussion for what they have done to-day.

Colonel LONSDALE HALE :—I rise to propose a vote of thanks to General Sir Richard Harrison, who has taken the chair to-day under peculiar circumstances. Lord Raglan and myself had a good deal of talk about this lecture. Bearing in mind that directly after the present Commander-in-Chief took office he made his *début* here as chairman for the Volunteer force, I thought it was desirable on an occasion of this sort that we should obtain for the chair some corresponding member (a civilian it might be) of the War Office, to give the Militia a lift up in the same way as the Volunteers had a leg up by Lord Wolesley. This, however, fell through, and then Lord Raglan asked General Sir Richard Harrison to take the chair. Sir Richard was going abroad, but he put off his journey in order to come here to-day. After the arrangement was made, it came to my knowledge that a certain high official had said, "I shall be happy to take the chair on this occasion." What was to be done? Sir Richard's name was on the bills. Fortunately, he and I were old comrades, and I knew my friend. I wrote at once to him and said, "Will you stand by and let me try this individual, and if he cannot come will you come?" Sir Richard said, "Go on ; I will stand in reserve." I communicated with the official. And if the Army Estimates, in which you are concerned, had not been down for discussion to-morrow or the next day, that official would have been here. When we found that he could not come, we turned to our friend ; and I am sure that, next to the high official, you could not have had a better representative of the Army. I beg to move that we thank him for his great kindness in taking the chair.

General Sir WILLIAM GORDON CAMERON, K.C.B. :—I beg to second the vote of thanks. I am sure we are all very grateful to General Sir Richard Harrison for taking the chair on this important occasion, and for the very practical remarks made by him at the close of the discussion.

LORD RAGLAN :—One word on a personal matter. I have to thank Sir Richard Harrison for the way in which he alluded to my grandfather. It adds one more to the many kindnesses I have received from him.

ON COMPANY FIELD TRAINING.

By Major A. W. A. POLLOCK, The Prince Albert's (Somersetshire Light Infantry).

Wednesday, December 9th, 1896.

General Sir RICHARD HARRISON, K.C.B., C.M.G., R.E.,
in the Chair.

The CHAIRMAN :—Ladies and gentlemen, I have much pleasure in introducing to you this afternoon Major Pollock, of the Somersetshire Light Infantry. I think I may mention, before he begins his lecture, that he is not only a theoretical soldier but a practical one, that is to say, every word that he has written he has practically tested in the field. I can testify to his company having been one of the best trained that it has ever been my pleasure to see. Without saying anything more, I will ask Major Pollock to read his lecture.

LECTURE.

THE application of drill to tactics stands upon a very different footing in the infantry to that which it occupies in the cavalry. Formerly there was no such distinction. In the days of smooth-bore muskets battalions were trained exclusively as battalions to fight as battalions, and their efficiency in battle depended upon the precision with which they could conform, not only to the will, but also to the voice of their commanders. In the present day the conditions of infantry fighting are entirely altered, and the several companies of which battalions are composed may be said to have discarded unison in favour of harmony. That is to say, in other words, whilst it is imperative as ever to aim collectively at a single tactical objective, the companies can no longer be controlled and guided by the one voice of the lieutenant-colonel, but must severally endeavour to carry out his intentions so far as the special conditions attending the operations of each will admit. In short, an infantry commander is no longer in a position to do much more than indicate, generally, the task to be performed, and must be content to leave the details to the discretion of the subordinate leaders upon the spot, without direct supervision upon his part.

Thus the ultimate responsibility falls upon captains of companies, because even in the case of weak battalions the lieutenant-colonels are unable to exercise any general command after the moment when the companies become actively engaged in the fight. The training of infantry, therefore, demands that the companies shall be so instructed, individually, that they may be thoroughly capable of severally performing their allotted parts in co-operation with each other, supporting one another, and expecting to be similarly supported. All have the same general object in view, but, although the whole combine harmoniously for a single end, they do so, each by the particular methods dictated by the circumstances attending its own action. Such independence in the choice of means, qualified by unity of purpose, can best be cultivated by instructing the companies, singly, at field training. Perfect discipline displayed by instant and implicit obedience to all orders, including thorough control of fire, is the very essence of successful infantry tactics. Drill in the infantry is the mainspring of discipline, but parade movements have no place upon the battle-field. In the cavalry, upon the contrary, drill is not only the foundation of discipline, but also the soul of manœuvre and the backbone of the charge. Cavalry manœuvres up to the very moment of charging, and squadrons, however well trained individually, would be at the mercy of adversaries more familiar with the drill of masses. But, in the infantry, a really well-trained company is already a useful fighting machine. The manœuvres of large bodies are for infantry only object-lessons illustrating, practically, the theory of combination already explained to the companies, and represent the final polish needed to perfect an already well-made and highly-finished article. If the article in question, namely the company, is not already well and truly fashioned, the polish of manœuvres is wasted upon it, and the futile attempt to give it may even do more harm than good.

A number of companies, all of them well trained individually, fall readily into their places for combined action, although they may have had but little recent practice in battalion or brigade. The idea of combination will have been instilled during company training in conjunction with at least one other company, and a rough and ready application of the theories thus acquired will fairly answer the purpose.

The case of cavalry is totally different, because thorough familiarity with the drill of large bodies is essential to tactical efficiency. Perfect order, as if on parade, is required, not only whilst manœuvring for advantages in the initial situation, but also during the actual charge itself. This cannot be acquired by squadrons individually, and all that squadron commanders can effect in this direction is to make their squadrons fit material for the hand of the superior officer who welds the entire machine together. From a fighting point of view squadrons are trained, individually, only to render them capable of being trained to fight collectively, but the infantry companies at field training are prepared directly for their places in the fight. Battalions detailed for the firing line must quickly be dissolved into their elements, that is to say, become merely so many companies, from the moment that they enter the fight ;

but cavalry, unless the squadrons drill together like clockwork right up to the actual shock, is useless unless opposed to still worse trained adversaries. It is only when a squadron is detached or is detailed for some distinct duty that it is enabled to display its particular merits as an individual squadron; but an infantry company, whether on outpost duty or in the fighting line of a general action, is usually dependent far more upon the common-sense application of general knowledge than upon any drill, except musketry drill, that it has learned upon the barrack square.

In the forefront of an infantry fight, drill manœuvres are impossible; but the discipline, especially fire discipline, so essential to success, is wholly dependent upon the drill by which alone it can be acquired. When troops show good fire discipline, they demonstrate the fact that their general discipline is so good that force of habit obliges them to use their weapons in the manner learned at drill as often as they are ordered to do so. With this much secured, the rest can be taken for granted. A state of discipline which is capable of causing men whose nerves are highly strung by danger and excitement, to fire steadily by word of command, with good aim, and sights correctly adjusted, at the targets indicated from time to time, will also suffice to urge them onwards as often as they are called upon to advance. Fighting discipline is after all nothing but the habit of obedience, aided by *esprit de corps* and the courage of individuals. When the recruit is taught to handle his arms, and to perform all drill movements smartly—moving like lightning at the last sound of the word of command—he is already learning the habit of obedience, to be afterwards demonstrated by fire discipline.

Bearing this in mind, it appears desirable to point out, before proceeding to discuss the subjects to be taught at company field training, that captains of companies incur a grave responsibility if they fail to exact the utmost smartness from their men at all times during the training. Smartness is after all nothing but cleanliness, soldierly bearing, steadiness in the ranks, and prompt obedience to every word of command. Smartness as regards drill itself can only be gained by constant practice, and in the process the habit of obedience is acquired. Without reasonable smartness at drill, no proper fire discipline can be established. The original parade polish will lose its lustre on active service, but so long as the slightly clumsier attempt to comply with an order follows instantly upon the order, the lack of finish need not be hurtful. In any case, only a battalion of veterans can afford to be slovenly in its drill. Some officers appear to imagine, because their companies are at field training, or at musketry, that the barrack square may be relegated to oblivion. This is a great mistake. When men are standing easy or marching at ease, by all means give them freedom to do as they please, so long as they do not make too much noise or get out of their places without permission; but at other times the precision and smartness of drill should invariably be exacted. The fact that polish will be lost upon active service is no reason why its brilliancy should be permitted to diminish prematurely. Polish is easily lost but not so easily regained, and there is more in it than some people appear to admit. The secret of securing steadiness in

the ranks is to avoid overtaking men's endurance by keeping them too long at attention; and last, but not least, never to allow "Stand at ease" to be thought equivalent to "Stand easy." Finally the officers must themselves set an example of personal smartness fit for the men to imitate; and must further remember that smart drill without a smart word of command is impossible. Companies do not go to field training to learn their drill, but to learn how to apply it in the fight, by the preservation of order and the maintenance of fire discipline. Drill is not directly applied in battle, but holds its sway as the school in which discipline is acquired.

An apology is due for so long a preface, but the object of what has been said is to indicate the standpoint from which the real subject is intended to be approached. The syllabus given in Part X., Infantry Drill, may be taken as a general guide to captains of companies, provided, not as an unalterable programme to be followed implicitly, to the destruction of their own initiative, but simply in order to detail the various branches of instruction which they are required to undertake, according to whatever method pleases them best. Judgment will subsequently be given according to results, quite irrespective of the particular methods employed.

The preliminary week with the N.C. officers is too often treated somewhat in the nature of a farce. Officers know so well that a man who has never executed a sketch in his life cannot be fully instructed in six days, and, therefore, they often fail to teach even the little that can be acquired in so short a time, forgetting that if the rudiments are thoroughly grounded this year, better things can be done in the years to follow. But even in the first year a great deal more can be accomplished than might at first be supposed, provided that the face is sternly set against attempting too much, in the effort to avoid doing too little.

But little time should be wasted over conventional signs. Beautifully embellished copies of conventional signs are an abomination. The roughest pencil copies of signs drawn for the class upon the blackboard are amply sufficient so long as they are reasonably intelligible.

The theory and rough construction of simple scales can be taught to most men of ordinary intelligence; and in any case a man is not worth teaching who cannot be made to understand that given a piece of cardboard, divided into equal distances, of suitable length, or a penny ruler, he has only to call those equal distances hundreds of yards; and if he cannot himself discover the scale upon which he thus constructs a map, someone else can readily do so after it has been made. Men can also be quickly brought to realise the difference between the true and the magnetic North, and that ordnance maps are made with reference to the former. A little practice in setting maps upon the table will instil this into their minds. This much done, the methods of finding one's position can generally be made clear. The meaning of contours can be explained without necessarily going at all deeply into horizontal equivalents or the system of proceeding to contour a sketch. But a light touch of these matters will enable the class to ascertain the gradients presented by given

slopes. When the members of the class can follow a road upon the map and state correctly where it rises sharply, falls gently, or follows a flat, the situation may so far be regarded as satisfactory, and the next thing is to gain a knowledge of how to find the way from place to place by map and compass, and to show that the scale of the map is understood by giving the distances upon it between the points named. Some of the class may be found worth teaching the system of plane table sketching, and possibly one or two may be amused with the prismatic compass ; but the thing to be chiefly aimed at is to teach the whole how to make an "eye sketch" with the aid of nothing but a penny ruler and a pencil. Working with the pocket compass is unsatisfactory, and this instrument should be used merely in order to mark the North point upon the sketch after the paper has been set in the direction of the 2nd Station.

The penny ruler is an admirable instrument for the purpose in view. Taking a quarter of an inch as representing 100 yards, we have a scale of $\frac{1}{4} \div 100$, or 4'4 inches to the mile — quite as small a scale as the majority of N.C. officers can use with any reasonable accuracy. For first instruction, the half-inch to the 100 yards should be used in executing a short sketch, in or near barracks, just as a start in out-door work.

Then, to give an interest in the final out-door exercise something of the following nature can be attempted. Find a place where two roads branch off at an angle, say north-east and north-west, and choose four points upon a line passing east and west, upon a front of, say, two or three miles cutting the two roads. There should be field paths and lanes within the area thus enclosed. Assume that the company, in four sections, has been ordered to reconnoitre northwards, from the fork of the roads, and finally to reach posts of observation at the four points-already named. The N.C. officers, in four groups, represent the sections. Indicate an intermediate line upon which all four parties are to communicate before advancing further, and direct that communication is also to be established at other times as often as practicable. Each group is to sketch the route by which it reaches its objective point, and also the off-sets by which it effects communication with the adjacent groups. Such an operation has been successfully performed by the N.C. officers of a company, and in it the N.C. officer in charge of No. 4 Group was obliged to effect his communication with No. 3 by means of a compass bearing that he himself had previously taken from the map, by which he crossed a considerable park, heavily timbered, including a thick cover, inside the gates of which park he had never previously entered.

During the indoor work for preliminary instruction, at least half-an-hour every day should be spent in knotting and lashing and in the construction of miniature bridges. By this means, when the company proceeds to its training all the officers and N.C. officers can be rendered proficient instructors capable of properly teaching the men what they have to do. The poles used for aiming-drill tripods form excellent material for miniature bridges, and a couple of shillings worth of cheap cord will supply the necessary lashings.

When the company performs its training the principal aim must be to ensure that the whole of the programme of work is got through by one means or another. It is of no consequence how or in what order, provided that the work is done well. Instruction in one subject can often be so combined with that in another, that, if favoured by fine weather, a great deal more can be done than if it is attempted to deal with each separately. Lectures should be carefully prepared and written out before the training is commenced. Extemporaneous lectures can never get over the same amount of ground, thoroughly, in a given time. Lectures should be frequent and short. It must never be determined to get through a fixed quantity of matter in a particular lecture. Explanations and catechising take more or less time; and how much, can seldom be estimated. The correct plan is, therefore, to have the lectures divided into subjects, and take one, two, or more of these subjects, according to the passage of time.

Instruction in all the subjects included in the "Programme of work," with the exception of the "Company in action," must be so nearly confined to simply following the instructions contained in the Red-Books, that they may all be dismissed from the present discussion upon the above grounds. The "Company in action" will furnish the text for what follows, but before proceeding to speak of this there are just two points which may be alluded to in relation to "Hasty entrenchments." It should never avoidably be omitted to construct a shelter trench at night, when it is really dark, with the object not only of overcoming the ordinary difficulties in digging the trench under such circumstances, but also to learn how to do so without *noise*. Secondly, it is also a good plan to dig a shelter trench by day, *against time*. By putting both front and rear rank men of files to work by turns at single tasks, the half-hour-shelter-trench may be dug¹ and finished with no faults, except that some of the tasks will be a trifle too deep, in $14\frac{1}{2}$ minutes from the order to commence to the order to cease working. This is a useful exercise, and shows men what can be done if needful.

The "Company in action" involves a wide subject, and the captain is, in this, far more dependent upon his general knowledge and his wits than upon anything that he can find in print to read to his men or to furnish rules for his guidance. He requires to have opinions of his own, formed after reading those of others in whose judgment he has confidence. He must base his instruction upon known precedents and established principles, and endeavour to apply the results of his own study in a fashion which shall be readily comprehensible by those whom he is to teach. The general fabric is supplied to him, but he must supply the details—furnish the house, so to speak—himself.

The first principle to be impressed upon the men is the importance of preserving order as long as possible in the fight, and the absolute necessity of instantly grappling with disorder when it comes, as come it certainly will. It must be explained that all ranks have their share in the task, and that the force which enables them to fight with credit in spite

¹ Soil rather difficult and requiring use of "pick."

of disorder and to regain their lost formations, is the influence of discipline. Badly-disciplined troops, however brave individually, when once thrown into confusion are lost. But well-trained soldiers instinctively hold together, assume temporary formations, and regain their proper order upon the first opportunity. But to enable this to be done, the preliminary training for war must include practice in dealing with the confusion of battle, which will for that purpose be imitated as nearly as can be arranged. With this object it is essential that men shall be made to realise how every great matter is dependent upon lesser ones. All units, large and small, endeavour, to their utmost, to preserve order; but should order be unavoidably lost, the first thing is to reform the lesser units, and from this beginning rebuild the larger ones. Deployment for battle breaks up a brigade into battalions, and the battalions in their turn are dissolved into companies. To some extent also the companies become sections. But, whilst this last is admitted, it must be understood that the company is divided into sections chiefly for the purpose of local control, and because it is easier to keep a section together than an entire company. It is the business of the men composing a section to keep together in their section, and it is the business of the whole section itself to stick tight to the other sections and preserve the cohesion of the company. Similarly the company endeavours, against greater difficulties, to preserve the unity of the battalion; even a section, however, may become unavoidably extended over too wide a front, or may from a variety of other causes be so situated that a portion may be separated from the rest of the section. To meet this danger, with a view to securing the speedy re-organisation of the section and avoiding entire loss of order, provision is made for the sub-division of the sections into sub-sections; and behind this again there is the final and lowest organisation which places the men themselves in groups of fours. Men should be made to understand that there can be no excuse for the break-up of a group except by casualties caused by the enemy's fire, or by bad accidents which put men out of action. So long as the men of a group are able to move they must invariably move together, and the single aim of the four men must be to keep with the other groups forming their section. When the company falls into disorder, whether owing to a rush over rough ground, a charge, losses, or a reverse, every man must aim at the re-organisation of groups, every group aim at collecting in the section to which it belongs, and the sections similarly re-uniting in the company. A mob of men trying at once to reform in large units, such as a battalion, can only make confusion more confounded, unless the company markers are placed for them to fall in upon. But if the men have preserved their groups, they have done something towards reforming their sections, and when these are formed they can one by one reform company, and finally even the battalion can be got in hand. The successful storming of a village or wood is certain to produce confusion, and the maintenance of the position won, against counter-attack, must generally depend upon a prompt restoration of order.

It now remains to indicate the lines upon which work should be

done, with a view to accustoming the soldier to meet the difficulties and dangers which confusion will bring to him in all kinds of fighting.

Companies are usually struck off duty for field training in pairs, unless circumstances permit a still larger number to be exercised together.

The first thing to do is to train each company, separately, to cope with the disorder which can be raised in a single company within itself; and, secondly, to proceed with the more difficult task of disentangling two or more which have been mixed up whilst working together.

It will be admitted that before undertaking to restore order it is necessary to have so drilled the men that there shall be an "order" to restore.

The first stage in fighting drill is, therefore, to obtain precision in purely drill manœuvres. Dressing of the extended line, preservation of section intervals, intelligent use of cover, direct advance, etc., such as used to be the beginning and ending of the old attack drill, must consequently be practised, with especial care in reference to the drill features of fire discipline. Having succeeded in getting the company to drill well without difficulties, the next thing is to get fairly good drill in spite of difficulties, and to gradually increase those difficulties until all that can be thought of and imitated have been introduced. In short, first get drill so good that nothing but bullets or very broken ground could produce confusion, and then teach how to work in spite of the greatest confusion that can be artificially created in resemblance of the real confusion of battle.

The system of stages recommended is as follows :—

The regular drill having been pronounced satisfactory, proceed with the further education.

Extend the directing half company; reinforce with a third section to the outer flank, and subsequently throw the remaining section broadcast into the line. Cause section commanders to tell off temporary sections. When the company is under suitable cover (real or imaginary, but real if possible) re-organise the proper sections :—Thus, section commanders place themselves 1, 2, 3, 4, and call their men to them on the order "Re-organise." The movement being covered, if ordered, by the independent fire of such men as may already be in their proper sections. Having re-organised, proceed with the attack. Having unfixed bayonets, after the charge, order the men to look to their front, and without their knowing in what order or where they are placed, arrange the section commanders in order, say, 2, 1, 4, 3, in column facing as you please. Give the order "On section commanders by the right (or left) assemble" (or bugle sound). Men to double in, find and form upon their own section commanders. No pushing, no talking. All to be in their places ready to form fours the moment the last man has halted.

Such is the first stage.

The second stage consists in a first lesson in dealing with casualties and the confusion arising first by the loss of leaders, and secondly by the introduction of strangers into the line. This latter being simulated by means of the casualties being thrown again into the line. The company is

extended so that all four sections are brought into the line in their proper order. During the advance, make casualties of section commanders. The first man who notices the casualty is to take command. If a senior wishes then to dispossess this self-appointed leader, he may do so. Repeat the operation until the greater number of the privates, as well as all the corporals and lance-corporals, have had turns in command of sections. A subaltern follows the advance collecting the casualties, and as soon as they amount to about the strength of a section, extends them and sends them broadcast into the firing line. No casualty is again to take command of a section during a single attack. Thus the colour-sergeant having been made a casualty, rejoins the firing line as the junior private, so to speak. Section commanders should be made casualties at awkward moments—during a rush, for instance, or when actually giving orders.

When the company is proficient in dealing with the passage of command from one to another, as one leader after another becomes a casualty, we proceed to the third stage; extend the company as in the first stage, and apply to this the casualty procedure detailed for the second. But in this stage, in place of touching individuals and making them casualties, order men of all ranks to fall out, as they please, during an advance, during a rush, or when halted for firing. This gives greater reality, for, however stealthily the captain may endeavour to make casualties by directly indicating individuals, it is hard to escape observation when doing so, and the great point is that the casualties should occur so as to be generally unobserved until their effect becomes apparent through the cessation of orders or some similar cause.

Finally, when the single company is so trained that any private can on the spur of the moment take command of a section and command it intelligently, in accordance with the orders given for the attack in progress; when temporary units can at any moment be organised by the section commanders for the time being, and when the company can instantly re-organise its proper sections under the soldiers at the moment commanding the sections, without loss of fire discipline and in spite of loss of proper order, then the time has come to work two or more companies together, mix them thoroughly and teach the men to extricate themselves from the confusion, by sections, reform company when opportunity offers, and meanwhile to preserve fire discipline whilst still mixed and working in temporary sections.

When the companies are working together in the final stages, and after the required lessons have been fairly learned, the N.C. officers who have been directed to fall out in order that privates may from the first command sections, can be utilised to represent a skeleton enemy. It is most important to have real men to represent the enemy whenever this is practicable; otherwise the scouting to reconnoitre the enemy's position becomes little more than a farce, and the effect of errors committed during the fight itself cannot receive practical demonstration. Therefore as often as the companies at field training are working together, each should supply a few men to represent the enemy. If the companies were

to be invariably opposed to one another, practical instruction in combined action could not be given.

To prove that a company has learned its lesson, it should be caused to deliver an attack, the sections being from the first commanded by privates and the whole of the N.C. officers having been previously ordered to fall out. The inspecting officer should choose men from the ranks to command the sections, to commence with, without consulting the captain or any person who knows which are the most competent. The captain should be permitted only to indicate the point of attack, detail the sections, name any special dangers and advantages attending the advance on such ground as can be seen, and then be ordered to fall out and leave the rest to the men. If all that has been suggested is well done during the advance, fair evidence will have been given that loss of leaders and loss of order need not destroy fire discipline or the orderly prosecution of the attack, in spite of the utmost apparent confusion of all original organisation.

It only remains then that the whole battalion shall be exercised upon similar lines. Different systems for extricating the companies from the mob will occur to different officers; but so long as the methods employed are simple, and found to answer the purpose, the desired result has been attained. Celerity and simplicity are the objects to be aimed at.

History proves that success as well as failure produces disorder. The disorder is inevitable, and cannot be prevented by any system whatever. The object of our training should, therefore, be to enable good work to be done in spite of whatever disorder or confusion is encountered. So long as troops work in units by word of command, and show therein good fire discipline, they can win victories, whether the units are temporary ones, improvised from time to time, or the original units formed upon parade.

The company executing an attack without officers or N.C. officers is not a fancy picture—I have seen this done myself—nor do I recommend anything else which has not already been successfully attempted by soldiers now serving.

My opinion on rushes rests upon a very simple basis, and I think a practical one. Most of you will have read of the right attack on Le Bourget, by the Alexander Regiment of the Rifles of the Guard. The firing line of the regiment was divided into two echelons, that is to say, the rushes were executed by alternate halves. These rushes commenced, in consequence of the ground being open, at a distance of some 2,000 yards from the enemy's position. There was no cover available, except cover from view, afforded by certain fields of standing potatoes amongst which the men threw themselves at each halt. The attack was successful, without very serious loss, and this in spite of the fact that it was not strongly supported by artillery. Prince Kraft bases upon the success of that attack a theory which I venture to recommend to you. I do not remember the exact words, but it is to the effect that no attack directed against a single objective should be divided, for the purpose of rushes, into more than two echelons; the advantage of this being that when the one echelon rushes to the front, that which remains in rear can maintain its

fire throughout the advance, and after the completion of the advance of the echelon which has rushed to the front. By this means you gain two advantages, as compared with the old system that we had of alternate sections or half-companies as the case might be. Where small units all along the line rush to the front, they mask the fire of all those left behind. Therefore the fire of the entire firing line is absolutely paralysed from the moment that the rush is commenced. By the means which I have described, you can not only avoid that paralysing of the fire, but can also afford to make the rushes longer. By using long rushes you reduce the number of exposures, and also give greater difficulties to the enemy in getting the range. Moreover, as the echelon in the rear can continue firing during and after the advance of that one which has gone on, you can not only make the rush longer, but you can also give pause at the end, for the men to recover breath, before they resume firing. We rush 40 or 50 yards, and a section is considered smart if it opens fire on the spot, the moment it gets there. I should like the rush to be 100 yards, when possible, and a distinct pause to be made for the men to recover their breath, and think about what they are going to shoot at. Then we come to what will have occurred to many people, viz., that if you are rushing by half-battalions, it is practically impossible for the whole of a half-battalion to jump up as one man and rush together. Before we get to rushing, I think we must start with the idea—assuming the centre of the line to be directing—that the directing half should not only direct, but lead, the advance, *i.e.*, be the first to rush when the time for rushing comes. And, secondly, I think that you should begin to rush *before* you are obliged to do so. If men want to go on, and the general line cannot proceed, it is obvious that rushes will come spontaneously, that is to say, units which think they see some opportunity of gaining ground, will rush to the front and give an example to others who will align themselves with them. But it is my opinion that you should begin rushing before you are obliged, so as to establish a system of hand over hand, one half shooting and one half advancing, before the enemy's fire becomes really destructive and renders such an organisation difficult, if not impossible to inaugurate. A half-battalion—much less two battalions of a brigade, by half-battalions—could not expect to advance like one man the moment someone whistles; but if you commence by sections, like a peal of bells, from the directing section, the operation becomes easy. Supposing there is somebody in command of the firing line, or if there is not, let the officer commanding the company, in which the section of direction is, blow his whistle and give the "Advance" signal. Supernumeraries pass the word along the line: "Right (or left) half, prepare to rush"; which means that every section fires the volley it may be about to fire, without hurry, and then ceases fire. Having given a short pause for this to be done, the whistle and signal are repeated. The commander of the directing section jumps up, "No. 4," or No. 1, or whatever it may be, "Rush." The others follow in succession at about three or four paces distance. The line thus gets up by sections from the inner flank to the outer. Meanwhile, the other echelon, left in rear, is shooting all the time.

Major-General M. W. E. GOSSET, C.B. :—The importance of this subject cannot be over-rated. I am sure that those who have listened to the lecture will agree generally as to the soundness of Major Pollock's system of company field training. I am glad to see that he lays great stress on the necessity of steady drill and parade ground discipline. I am inclined to think that there may be a tendency to let this slide; whereas the fact is, that with the improved firearms of the present day it is more than ever necessary. Strict discipline is the key-note of the whole business. I have had a good deal of experience in India in field training, and its general introduction into our Service has been of great benefit. It is not altogether something new, its necessity having been felt in old days; and it was carried out in my regiment and others after a fashion, though not with the thoroughness it is now. We have officers of various capacity and the training, consequently varies. If all paid as much attention to it as Major Pollock, and had as much knowledge as he has, it would be a good thing for the Service. The test of a company's training is the way in which it works during brigade or other manoeuvres. If the training has not been thoroughly well done, a general officer finds himself handicapped. In the manoeuvres in India that I have taken part in, I have had to remark that battalion and companies have come inadequately trained. I am not quite sure whether I am right in saying so, but I believe the training of recruits in Sec. 47, Part I., of the Drill Book, "Drill of a section in extended order," is not always so good as it might be. A recruit should be handed over to his captain well grounded in the A B C of this part of his drill. A drill sergeant generally teaches him smartness, steadiness, and how to handle his arms; but it requires a soul rather above the ordinary drill to teach the principles of extended order well. Major Pollock, in his lecture, tells us how he would utilise casualties. I am not aware that the system of falling out men as casualties is authoritatively laid down anywhere. It may be a necessity in order to teach them our system of attack, but in peace-time we want to teach men what to do in war, and I have long thought that to make men fall out when at manoeuvres is a mistake. We all know what human nature is. If all men were equally brave and would advance regardless of the bullets flying about their heads, it would simplify matters considerably; but they are not, and the revelations of Von Hoenig show how difficult it is to get men to face a heavy fire. Is it not, therefore, a mistake to allow casualties? This leads to another point, with reference to the attack by a battalion or brigade. I fully recognise how necessary it is to teach men to work in sections or groups and to re-organise rapidly. Whatever our system of attack may be, disorder is inevitable sooner or later; but at the risk of being thought heretical, I think we rather go out of our way to create disorder at a considerable distance from the enemy. For example, suppose in the attack by a brigade, a battalion is given a certain frontage in the firing line. According to the systems generally adopted, a certain number of companies are told off to make the firing line, and each of these companies in the first instance extends one section to occupy this frontage. These sections are reinforced, and thus early in the attack there is a mixing of units. His Royal Highness the Duke of Connaught, in his report on the late manoeuvres at Aldershot, says, "I endeavoured to point out that it was necessary, in order to keep down the enemy's fire, to make the line as dense as possible from the beginning." Now, if this is the case, my contention is, that it would be far better, instead of mixing the units, to keep them intact; and the only way to do this is to send whole companies into the firing line—in fact, base your system on the old British line. The evil of ordered disorder would be minimised if all men were trained as the lecturer trains his men; but on the outbreak of war, supposing we put two army corps in the field, they would be composed of a certain number of old soldiers, many young ones, Reservemen, and, perhaps, volunteers from the Militia. Wars nowadays begin rapidly, are carried on rapidly, end rapidly, and it is doubtful whether there would be time to train them up to the standard neces-

sary. Good discipline and the fighting instincts of the race will cover a multitude of sins; but, I think, the longer you can keep units together under their own officers and N.C.O.'s the better.

General Sir WILLIAM GORDON CAMERON, K.C.B. :—I only wish to add my testimony to the very important nature of the subject that we have before us to-day. I have had a good deal of experience as a general officer in superintending this company training since first starting it in my brigade at Aldershot in 1879; and all I can say is, that I most cordially agree that there can be no big satisfactory manœuvres without this preparatory work. I do not believe that the country will get a proper return for its money, with regard to the expenses in preparing for big manœuvres, unless the companies have been previously thoroughly well trained. I quite agree with what the lecturer has said with regard to all those principles he has enunciated in the preparatory part of his lecture; and I go farther and say, that if the company training is to be of that very superior character which we require in a very small and scattered Army like ours, that the captain has to sit down at night and prepare for the following day's work in the most thorough manner, just as we prepare at this Institution for our war games, and so on. He cannot cogitate too deeply, to the best of his ability, over the proposed course (theoretical and practical) for the training of his men, or carry it out thoroughly. I have found theoretical training—we call it theory, but after all practice consists in going out on the ground to simply illustrate what we have been teaching the men in the barrack-room—of the greatest use in raising the standard of intelligence on the part of the men. I have found it of the utmost importance to attend myself in the barrack-rooms, and by means of catechising the men to thoroughly implant what it was wanted to teach them. Mere lecturing without catechising, in language the men can understand, is like too long a sermon, of which you do not carry very much away; but by a proper system of catechising the men in the barrack-rooms you can raise the standard of their intelligence to a very considerable extent, and you can thoroughly teach them those rules that you afterwards have to apply in the field. I would also remark that you require a different set of umpire rules for small manœuvres. This is a very different thing from the umpire rules for large masses of troops where the men absolutely hear nothing of what has been done, and go home, as I used to say in my reports, about as wise as when they came out. They do not read, most of them, the comments made afterwards, and they really very often learn uncommonly little. But if in these mimic manœuvres, company against company and so on, you have the men up and confront one party with the other, and thoroughly thrash out and explain to them on the spot all that has taken place, then you get good results. You call out even non-commissioned officers and private soldiers, and say, "Come forward and tell us why you did that to-day"; and they have to stand forth before their comrades and endeavour to explain. You thus excite an immense amount of interest and feeling of responsibility on the part of the men. Tommy Atkins begins to think then, and he is proud of himself when justly commended. If some patrol or outpost or sentry has done well or badly, and is shown up on the spot before the troops are dismissed, you may rely upon it that much more is gained from the impression made than by the usual after-criticism in print, and when the facts are either not realised or have been forgotten. As regards the exercises comprising the annual course of company training, it should be recollected that this is the only time the captain has his men together under his own command, and that they are struck off all garrison and regimental duties for the purpose of forming, once in a way, a complete tactical unit. This being so, you want to teach them what they cannot otherwise very well learn; and this I take to be their tactical work in connection with attack and defence of positions, rear-guards, advance-guards, outposts, ambushes, etc., etc. I am sure there is nobody here who will not agree with me that the most difficult thing to learn is quick appreciation of ground and how to utilise it for attack,

defence, pursuit, retreat, and so on. When you call the men together for this purpose, I think it is a mistake teaching them a lot of technical work, such as camp work, field engineering, etc., etc., which form part of the prescribed course. I say that you can teach all this during the rest of the year, without the whole company being necessarily together. Besides, men pick up all these things very quickly, and I maintain that nearly the whole time the company is struck off duty ought to be devoted to tactical work, and I think it is a waste of time if you employ the company in any other way. I understood the lecturer to say that if you want a thing thoroughly done, you should strike one company off duty at a time, instead of in pairs.

Major POLLOCK:—No, sir. By all means in pairs.

Sir WILLIAM CAMERON:—Of course, in a great camp such as Aldershot you have to strike off in pairs. I found in South Africa the best plan, if there was time, was to strike single companies off duty, and then insist upon six tactical exercises, conducted in accordance with Part X., Infantry Drill. The enemy being furnished from the rest of the battalion, you then not only kept the companies thoroughly well going as long as the period of company training lasted, but you also kept the other companies fairly at work, so that there was perpetual training going on. I do wish to impress upon all my brother-officers the enormous importance of this company training. I am only saying here what is recognised over the whole Continent, where the greater part of the time is taken up with thoroughly training all the units. If I were to take the field to-morrow with a lot of troops, give me thoroughly well-trained battalions, though they may not have been working together in brigades, divisions, or larger bodies. Of course, it is a very good thing when you can have large masses of men brought together; but if the units are perfect, if they are perfectly trained, then the general, after a few days or a few weeks, as the case may be, ought to have a splendid command, and be able to take the field against any enemy. But it is absolutely necessary, before you proceed to bigger operations, to have your units perfect.

Colonel W. T. DOONER (commanding 87th Regimental District):—I am sure that all who have listened to the lecturer will agree that he has given some very valuable suggestions and hints to officers commanding companies when at field training. If there are any company commanders here to-day they may perhaps think, when Major Pollock says it is very easy to teach men scales and gradients, the difference between the magnetic and true North, and to set a sketch, and different things of that description, that he has gone a little too far, and that some of these matters are not so easily grasped by non-commissioned officers. His lecture, however, confirms me in the opinion I held, that all company commanding officers are not alike, in fact that they are all not Major Pollocks; and that it is really almost impossible to hope that in a battalion you will get eight company commanders all sufficiently efficient to carry out the field training of their companies in the manner in which it should be done. I notice Major Pollock speaks of captains commanding companies, but I would point out that under present rules in most battalions there are one or two companies which are usually commanded by majors, and abroad I think nearly always three companies are commanded by field officers; and if I am not going off the line a little, and that in a discussion on the field training of companies, I may venture to touch on the organisation of our companies; this is the point that I wish to lead up to, viz., that we should have our battalions organised into four double companies for tactical purposes. We must all recognise the importance of the command of a company, and it would be a great improvement I think if for tactical purposes—I do not say for administrative purposes, such as pay, clothing, etc.—the battalion could be organised into four double companies under the four senior company commanders in the battalion. Major Pollock speaks in the lecture of the importance of preserving order as long as possible in the fight,

disorder being inevitable, a mob, and different expressions of that kind. Now, if our battalions were organised in four double companies, we should, I think, put off disorder as long as possible. I do not know what reasons can be urged against this double company organisation, except perhaps the small detachments which sometimes have to be furnished in Ireland, or when some fifty or sixty men might be required suddenly to aid the civil power; it is then perhaps convenient to send one complete company as at present organised on such duties. There is possibly one other reason which might be advanced if double companies were adopted, that the civilian authorities following that silly system of comparing us with other countries might argue that we had too many officers for each double company, because, of course, then we should have a company commander who would be either a major or a senior captain, we should also have under him a captain and two or three subaltern officers, according as the battalion was on home or foreign service. The advantage of four double companies in each battalion would be, that they would be able to form their own firing line, supports, and reserve; and I think with a strength of 200 men each double company would be sufficiently strong to carry it through most ordinary fights without getting into disorder or mixed with other companies. Reinforcing also would be much easier, and the mixture of units would be deferred as long as possible; and, lastly, we should have the best officer in command, that is, the four senior company commanders would be selected and be the most efficient officers of the battalion; in this way in peacetime, I venture to think, it could be relied on that the field training of companies would be carried out in the most thorough manner possible.

Colonel LONSDALE A. HALE (late R.E.):—The lecturer has given some advice on the subject of the preparation of lectures, and I am afraid I do not agree with him at all in the advice he has given you. He says that the lecture should be carefully prepared and written out before the training is commenced. He is against extemporary lectures. But do I understand him to say that he would have lectures to the men read, and not given extemporarily? I have had considerable experience in lecturing to stupid people, and even to Staff College students' classes in the hour after lunch, and I managed invariably to keep them awake, not from any eloquence on my part, but because my lecture was extemporary. The right way, to my mind, to deliver a lecture to anybody—a private soldier or anyone—is to write it out from beginning to end first of all, then reduce it to a series of long marginal notes, and then go over those marginal notes and see if they recall to you the paragraph to which they refer. Then reduce those marginal notes to a word, and continue until a word recalls five or ten minutes' speech. Then you can look at the soldiers all the time you are speaking to them, and you do not let them go to sleep. If you read, you cannot watch your audience, and cannot see whether you are getting dull yourself—you cannot tell how they are taking it; but if you always have your eye upon your audience, if you find them inclined to be sleepy you can try to rouse them up. Moreover, an audience does not like to go to sleep if you have your eye on them. I can assure you that the way to keep the attention of your audience is to get the lecture well up yourself, and then deliver it as if it were extemporary, and then you get the character of being a wonderful extemporary speaker besides. There is one point I should like the lecturer to tell us, viz., to what extent he intends in the company training to make the dressing of the extended line be preserved. He tells us that the dressing of the extended line is to be carefully maintained, and he says the drill of the battalion is always carried on in the same way the extended line is to be dressed. Now, during the last few years at the manoeuvres I have generally been in the fighting line, and if there is a word that I absolutely loathe, and which I hear repeated over and over again, it is: "Men, keep your dressing." The whole of the extended line look to the flank, and never think of their section commanders at all; everybody tries to dress. Is not it right rather that the dressing of an extended line should not be what we call dressing; but when troops

are extended, section leaders should see that the general front of the line is preserved, so that whether in open country or difficult country, the men should be listening to what the section leaders are saying, rather than keeping their eyes this way and that way, and not to the front?

Lieut.-General Lord WILLIAM F. E. SEYMOUR:—I have nothing to say, except to hope that every word that we have in this paper written by Major Pollock should be printed and sent to every commanding officer in the Army as a guide, instead of, or in addition to, the syllabus at present in use; I feel quite sure that if that were done we should have the majority, instead of the minority, of officers taking the same pains as Major Pollock seems to have done, and the same good results would be attained, according to the experience of Sir Richard Harrison.

Major POLLOCK, in reply, said:—I have never attempted debate before, and, therefore, if I am feeble in replying to what has been said, I hope that you will bear with me. I must begin, with reference to what General Gossett has said, by confessing honestly that I have not the remotest notion as to what is in Sec. 47 of the Drill Book.

General GOSSETT:—It is with regard to training the recruit in the principles in which he should be drilled at recruits' drill, extended order, and so on.

Major POLLOCK:—Now I understand. Perhaps you will allow me to say what we do in this matter at the *dépôt* of my own regiment where I am now stationed. I occasionally take the recruits out in the drill-field, but my general plan is this: About ten minutes before the end of the mid-day parade, I say to the instructor of the first squad, "March your squad on to the grass." (We happen to have some grass on the square.) They are formed in single rank. The remainder, down to the men in plain clothes who have joined that day, are put in the rear rank. Each first-squad man has thus to look after one of the younger hands, and put him right. Then I drill them in extended order by signal; I do not open my mouth. I do this three or four times a week, having men in the ranks, some with dummy rifles and some with nothing at all. I find that this plan works very well. It makes the men *think*. I taught one squad thoroughly, including casualties, last October twelve months. I have never taught anybody since. Now I never waste time in teaching anybody. I expect the old hands to teach the new ones, and they do so. General Gossett has an objection to the falling-out of casualties during drill manoeuvres, on the ground that the men would skulk in actual battle. I think we may admit that men, who are going to skulk in battle, would skulk whether they had been taught to fall out as casualties or not. I cannot quite see General Gossett's objection. We can avoid casualties by reinforcing to the flanks, and so on, and widen the front as we go along, in the case of a small force; but when you have two or three brigades alongside one another I do not see how you can carry out the reinforcements without casualties.

General GOSSETT:—I wish to mention that last year, when in command of a District in India, I refused to have any casualties at manoeuvres. I wanted to see how it would work, and I attacked the position without reinforcements. In certain places the men overlapped. But I did it for experiment, and nobody was killed; and I was very pleased.

Major POLLOCK:—But there was nobody shooting at you at the time. I think that simplifies a rather intricate arrangement. General Gossett says that in trying to get order out of disorder we go too far in creating it, and that that is a mistake. I do not think that the creation of disorder should be applied, intentionally, at manoeuvres. In company field training, where you are dealing with a company only, and the sections and sub-sections within that company, then is the time to teach how to get out of disorder. But when you come to the regular manoeuvres of large bodies, I think you should aim at avoiding disorder, so far as is practicable.

General GOSSETT :—I think you misunderstood me ; I was not speaking of training companies.

Major POLLOCK :—We agree entirely there then. I think that in company training we should try to teach the men how to work in disorder and how to regain order ; but in manœuvres we should try to go through the battle, and to preserve order if we can, with the idea that if we can preserve it in manœuvres we may have a chance of doing so, to a certain extent, in a real fight. General Gossett also drew attention to an obvious difficulty, which is, that we cannot have a perfectly-trained company, with every man fit to command a section, on account of the Reservemen. That is quite true ; but the better-trained men we have got, the more easily they will carry those Reservemen along with them, just as I expect my first squad at the dépôt to teach the yokel fresh from the plough. Sir William Cameron spoke of increasing the intelligence of recruits by constant catechising. I do not think we can do too much of that. In my own regiment men do plenty of it, and also in the dépôt. In the battalion to which I belong, one of the arrangements is this : The colonel, we will say, is going round kits. The sergeant-major, or somebody else, goes on ahead, into a company barrack-room. To one man he says, "You are on sentry, No. 3 group, No. 4 picket." To somebody else he says, "You are connecting file between No. 3 post and the picket." And to somebody else he says, "You have just come to report to the commanding officer that you have seen the enemy at such and such a place." The colonel enters the room, and the sergeant-major says, "This is one of the men, sir." The colonel asks, "What are you ?" He says, "I am Private Thomas Atkins, H Company, 2nd Somersetshire Light Infantry, and I am on sentry—No. 3 group, No. 4 picket," or whatever it is. Another, on being addressed, answers, "I have been sent from No. 3 picket to report to the officer commanding that the enemy is coming on in such and such a place." We have that kind of thing going on constantly, and I think that it promotes their intelligence, because they have to remember and they have to think. I agree most fully with what Sir William Cameron has said about its being absurd to waste too much time upon tent-pitching and other purely mechanical work. Such things are so easily learnt when they have to be done ; but I think that a bit of bridging and lashing is very necessary.

Sir WILLIAM CAMERON :—It should be done, but I say it is hardly necessary to do it in this very important company training. When you strike every man off duty once a year for a certain purpose, I say it is a pity to waste time then.

Major POLLOCK :—Is not it rather important to get one's own men together, and know what they are all good for ?

Sir WILLIAM CAMERON :—You can have classes and do that throughout the year, without doing it at this special time.

Major POLLOCK :—Colonel Dooner speaks about scales, and so on. The following example will be an illustration of how I go to work in this and other things. I want to teach a man an idea of scales. I produce a photograph, and I say, "Now, look here ; who is that ?" "That is you, sir." "Very well ; how tall is that figure on that photograph ?" He will say, perhaps, $5\frac{1}{2}$ inches. Then I say, "Just to oblige me, call it 6." "All right," he says, "we will make it 6." "Now, how high am I, do you think ?" I suggest that I am 6 feet in my boots, then I say, "You see that photograph. There are 6 inches of picture representing a man 6 feet high. How much of the man would 1 inch of the photograph represent ?" And from that we go on. And so in the same way about slopes. I take the ruler and the India rubber. I put the India rubber on the table and say, "You are to consider that 1 foot thick, and you are to consider that that ruler is 19·1 yards long." I explain that I do not understand why it is, but I know it is a fact that if the slope of a hill is 1° you have to walk up 19·1 yards before you rise a foot. Then I put a second piece of India rubber upon the first and say, "The rise is now 2 feet,

with a slope 2°, and so on." It is unnecessary for me to say more, except that practical illustrations make instruction easy. Colonel Lonsdale Hale does not agree with lectures being read. Theoretically I entirely agree with him in that, but I think in order to give a lecture extempore you must first get a man who can deliver it. I think that for ordinary people it is far better to read a lecture than to weary your audience by taking three or four times as long as is necessary to say what you have to say. I do not think your men will fall asleep if you pause and ask questions as you go along. I do not suggest that one should read the lectures right through, and then begin to catechise at the end; but a sentence may be read which introduces a point, and questions may be asked upon it. Then as to dressing the extended line, I do not mean that every individual man is to be correctly in line. In my paper I say, "Before undertaking to restore order, it is necessary to have so drilled the men that there shall be an 'order' to restore." This applies to the drill practised on the drill ground, but not to manoeuvres.

The CHAIRMAN (General Sir Richard Harrison):—Ladies and gentlemen, I am aware that in former years some regiments had something like the company training that we have now, but that was done chiefly by the energy of individual officers. It could not be done thoroughly, because under our Army system many men are taken away for garrison and regimental duties, and, consequently, companies could not be made up to their proper strength. I cannot help thinking that one of the best things that modern administration has done for our Army was the establishment, in, I think, the year 1883, of what is called "Company field training," which means that once a year every company in a battalion has to be made up to its full strength, with its non-commissioned officers and all possible men present, and put through a complete course of training for war under its own officers, the course to last about a month, or more if possible. Whether that instruction can be extended so that recruits, having been once passed by the adjutant, should be handed over to the captains or other officers of companies for complete training in all subjects is, perhaps, beyond the scope of our present discussion. Anyhow, Major Pollock has stuck to his text, and has confined himself to a description of the system he used for training his company. He has given us a very interesting illustration of how he worked, describing how he was able to produce order out of the inevitable disorder that must occur in the latter part of any hardly-contested fight. I do not think there is anything for me to notice in the discussion. We have had an extremely interesting one, and I am very glad we have had one. I am quite certain that this subject is one that interests a very large majority of officers in our Army, though, unfortunately, we have not been able to fill the room this afternoon as much as I should have liked. Speaking as a general officer who has lately commanded one of our districts in England, I must tell you that the difficulties that I encountered in carrying on this company training were not difficulties that occurred in the regiments themselves. I had every possible assistance from them. The difficulties that I had to encounter were in obtaining suitable ground, in making a convenient annual time-table, and in providing the necessary stores. I am quite certain that if generals and staff officers and regimental officers work together, difficulties will vanish. I would like to give you a short illustration. When I went down to Devonport I discovered what Major Pollock alluded to, that the companies were training simply on the brick-fields, which is a very hard place just outside the lines. I cast about to see whether I could find some ground that would suit the purpose better, and in riding about I found a bit of undulating ground, wooded here and there, between two of the outlying forts. I spoke to my staff officers and said, "Will this do?" "It will be too far off," I was told; "the regiments will never get there." I said, "Well, I think we will get over that difficulty; I am not sure that the march out and the march back won't be a good thing, and will be part of the training for the

men." I then went to the commanding engineer and said, "I want that bit of ground." He said, "You cannot have it; it is let." I said, "Let? It is Government ground; I suppose we can have it." He said, "I am afraid we can't. We shall have to write to the Secretary of State for War. I do not think there is a chance of your getting it." I said, "Will you let me see the lease?" He brought me the lease, and I took it home and read it. I found that this ground was let to Mr. Somebody—I forget his name—subject to usage by the troops at the station. Some previous R.E. officer had made these good arrangements, but it had been gradually overlooked, and my friend the farmer had been enjoying this land, which was exceedingly valuable, undisturbed, at a fraction of the rate at which land was let all round about. Needless to say, he did not have that enjoyment much longer, for I worried him pretty well. With reference to the distance of the ground from the barracks, I will just tell you a little anecdote. It happened that a foreign military *attaché* came down to stay with the Admiral at Devonport, and several officers were dining there one night, when the *attaché* said, "You have no training to speak of in the English Army—nothing to what we have got. I should like to see any of your men run a couple of hundred yards." One of the officers said, "If you will come to our parade to-morrow morning, any company that you like to pick out shall run a mile." He said, "I do not believe that." However, he appeared at the parade on the following morning and chose a company. This company was in marching order, and fortunately it had just gone through its course of military training on the bit of ground that I have mentioned. The mile was measured, the company "doubled" the whole distance, and then charged across the square, cheering as they went. I never heard anything after that of the ground being too far from the barracks. It was evident that the march there and back and what they did there had thoroughly trained the men in wind, if in nothing else. The system of company training, as laid down in the Drill-Book, gives very great latitude to the regimental officers who have to carry it out; this is, no doubt, right in principle. But I cannot help saying this (which agrees to a certain extent with what General Gossett has said), that I think that for the company, at all events, some data should be given for formation for attack and defence, so that when two companies come together it will not be necessary to issue any special instructions to them. I believe it is quite practicable, and I cannot help thinking that it would be an exceedingly good thing. Some fifteen years ago I had the honour of giving a lecture in the theatre of this Institution—the old building—upon training for war, and I ventured to say that I believed there was no more honourable or interesting occupation in the whole world than that of training one's fellow men. I believe that this feeling is growing in our Army. Officers are now taking a great deal of trouble about this company training, and certainly the addition of company training to our regulations has not curtailed one jot the rush of young men to come into the service. I believe that company training will grow in favour the more it is thought about. Perhaps we may even see the day when it will be what Major Pollock has called "the backbone of infantry tactics." I feel sure that you will agree with me that Major Pollock has done a good thing in bringing the subject forward here in this Institution, and I call upon you to give him a hearty vote of thanks for having done so.

GERMAN NAVAL POLICY AND STRATEGY.*

By Captain Baron von LÜTTWITZ, of the German Grand General Staff.

Translated by Lieut.-Colonel E. GUNTER, retired pay,
Late East Lancashire Regiment.

THE Army and Navy have been at all times considered factors of equal importance in the defence of States having an extensive sea-board and a wide-spread ocean trade. There were palmy days in the history of the science of war when the strategical, and, in some instances, the tactical, co-operation of the two Services was as complete as the united action of the different arms of the land Service on the battle-field.

A first condition of successful co-operation is mutual understanding. It appears absolutely necessary that the German Army and Navy should learn to know and respect the peculiarities and the conditions necessary to the existence of each other. The officers of the Army quartered in the interior of the country are confined to the study of the text-books of the sister Service. We can only recommend to them that well-known book "The Influence of Sea-Power upon History," by Captain Mahan, by the translation of which into German the editors of the *Deutsche Marine Rundschau* conferred a lasting benefit upon us. Owing to the scarcity of good works on naval policy and strategy, this has deservedly attracted attention in all naval circles.

It is in the hope of encouraging officers to the study of this work that the author has drawn from it certain conclusions in this essay in which he has endeavoured to adapt the lessons of Mahan to the present situation of Germany.

In the term "sea-power" the layman generally only includes the organised Navy, etc., of a nation. But of like importance are its merchant service and its ocean trade. The influence of the Navy is strategical, but the merchant service and the foreign trade of a nation supply the State with the means which enable it to make extraordinary, continued efforts. They are essential factors in the rise and fall, which we call the history of nations. "The right use and command of the sea," says Mahan, "is 'only one link in the chain of universal commerce that leads to wealth,

*A previous article by Baron von Lüttwitz on the "Invasion of England" having been printed in the JOURNAL (February, 1896), a wish has been expressed that the present Paper should also be inserted. It will at least show the strong feeling of jealousy that the younger German officers feel of England's power at sea, and that they consider a war with this country a by no means impossible contingency.
—EDITOR.

"but it is the chief link. Its possessor takes the profits from the pockets of other nations and, as history seems to confirm, attracts wealth to its own shores."

The writer, after quoting many pages from Mahan's book, beginning with the second Punic War from 218-201 B.C., and his well-known deductions regarding the importance of strengthening of the lines of communications, continues:—"As long as European States rule over the greater part of the world and compete with each other in so many branches of trade, disputes about the most remote countries may be settled in Europe. All secondary questions may be decided on the main theatre of war, just as Napoleon said he could seize Pondicherry on the banks of the Weichsel. Such solutions may even be arrived at without actual war; and a nation always strong can in all negotiations throw a weighty word into the balance."

"Mahan has never recognised clearly, or, at least, has not made it clear, that in the year 1780, with a successful invasion of England, all those battles abroad, which, after all, yielded but small results, would have been decided at a blow. For this invasion, besides the energy of leadership on the French-Spanish side, other conditions were favourable, viz., the preponderance of the French fleet in the English Channel, and the readiness of the invading army. 'Even the threat of invasion promised,' says Mahan, 'great results.' This conclusion of his is wrong. It was not necessary to have the command of the sea to hold the West Indies or other colonies, but it was necessary to throw an army into England to dictate terms of peace in London, as England is only approachable by sea. Canada and the West Indies were not lost by the inability of France to make her power felt far and wide over the ocean, but because the inferiority of her Navy did not permit her to *attack the enemy in his own country* on the other side of the narrow straits of Dover."

After a successful invasion, even if her Colonies had been meanwhile lost, owing to their want of inherent power to defend themselves, they would again have been restored to her when peace was made.

For this reason *Germany has need of a sufficient fleet in her own waters, as here it is that a decision will be come to.* We shall for a long time be the weaker as far as foreign coasts are concerned, and it is impossible, especially for the weaker naval power, to be everywhere strong in defence.

If, on the other hand, we contemplate *local* struggles in distant countries, apart from the general course of the conduct of a war, it is different. The command of the sea here plays an important part as regards *the duration of a war.* If one of the opposing forces continually receives reinforcements from the mother-country and the other none, the result is, in most cases, not doubtful. Mahan illustrated this, happily, in the case of India, where a European Power could hold its own against a far more numerous Native Power; but if another European Power interfered, and landed troops to assist the natives, the first Power would be in a critical position. Then it would be important to cut off their communications by sea, and in time to destroy them.

The command of the sea had a powerful local influence on the Franco-English war in Canada, during the Seven Years' War. In 1759 the English fleet had driven away the French fleet in American waters, and had become the base of operations. Through her an English army was landed, and the fleet patrolled the St. Lawrence. The troops destined for decisive action, the taking of Quebec, started from the ships-of-war. Washington estimated highly the influence of the French sea-power on the issue of the American War of Independence. The author quotes several of his (Washington's) despatches in proof of this, and adds:—"You may also remark that the nature of the country, with its long-indented coast-line, where most of the fighting took place, and its long, broad estuaries and creeks running far up into the land, made water transport of more importance, at a time when railways were unknown, than land transport."

In fact, we see that the decision of the campaign was brought about by the appearance of the French fleet, which cut off all the communications of the English army blockaded in Yorktown. In the above case, he continues, "the circumstances in America were such that they were independent of events in Europe. That is, in so far, that a victory of France was always favourable to the cause of the United States; but that her defeat would not, owing to the inherent strength which the thirteen colonies possessed, have necessarily caused the downfall of these States."

The lesson to be drawn from this is, that colonies, especially of those countries who are inferior in naval power, should be placed in such a condition of defence that they could hold their own pending the decisive blow in Europe.

Modern wars are sure to be of short duration, owing to their enormous cost.

It is well to consider, says the author, the limited influence that naval power could have upon the events in Turkey. We allow that the moral effect of the sudden appearance of the English fleet before Constantinople would induce the Turkish Government to make any concessions. But it is a question whether, with the increasing paralysis of the Turkish Empire, a blow dealt at the centre of its nervous system would be felt in all its branches, and it is very doubtful if the Dardanelles could really be forced. Quoting Mr. T. Bowles, M.P., who is sceptical on this point, he continues:—"Supposing the English fleet were to succeed in forcing their way past the heavy-armed coast batteries of the Dardanelles with the loss of one or two men-of-war! After this the fleet would find itself in a regular trap in the Sea of Marmora. In a month they would have no more fuel; in two months no food; in four months they would be destroyed. The Dardanelles would be between them and their supports. Transports could not force these Straits. In short, no sane admiral would undertake to penetrate into the Sea of Marmora unless he were either quite certain of Turkey's friendliness, or had first subdued the land forts of the Straits." For this a land attack is required. It is possible, by landing a force on the west side of the Gallipoli peninsula to attack the forts, which are mostly open at the gorge from that side, so as, in the first

place, to take the western works, and then with their help to silence the eastern. If, for this land attack, the English troops were brought over from Malta, Cyprus, or Egypt, Turkey, supported by Russia, could always outnumber them. The influence of the English command of the sea on the solution of the involved Turkish problem can only, as far as human foresight can determine, make itself felt in collateral enterprises, in the blockade of Turkish seaports, or in landing troops in Asiatic Turkey, etc.

England will always weigh heavily in the balance in peace negotiations, or in the question of the dismemberment of Turkey; but she no longer holds the key of the situation as in former years.

The strategical influence of naval power will always be limited when, as here, it attempts to act alone. It cannot operate far beyond the enemy's coast-line, and can at best only act by destroying their trade. In order to effectively influence the issue of the war, naval action must be supplemented by land operations. An opponent whom one can get at on land can be destroyed, but a powerful opponent who can only be reached by sea is not to be entirely defeated without the assistance of a land army. Therefore England required Continental allies in her wars against France. Hence we see purely naval wars waged without great results. Any war carried on by a Continental Power against England must be a combination of land and sea operations. The great and lasting mobility which steam fleets possess essentially influences the possibility of such a war. The distance of the opposing parties from one another, the length of the lines of communication of an invading Power, are shortened by this mobility. Steam-ships are made less dependent on wind and weather than sailing-vessels, or the rowing galleys of the ancients. Then the best thought-out plans might be wrecked by storms. This difficulty has nearly disappeared. The winds are no longer trustworthy defenders of England's coasts.

There remains the influence of naval power on *the development of trade*, and on the welfare and national prosperity of a State. The classical example of this is Holland of the seventeenth century. The author quotes from Mahan a description of Holland in Louis XIV.'s time by a French writer as the modern Phœnicia. Its people had become the ocean-carriers of the world. A rich industry arose through their increasing exports. Their riches and their fine fleet enabled them to resist the power of Louis XIV. Until 1678 they bore the burden of the war almost single-handed, owing to their skill as merchants and seamen. But their country was too small, their population too scanty, their form of government too weak to enable them to bear such exertions for long. The position of Holland between France and England involved her continually in wars with one or other of these Powers, which eventually exhausted her finances and ruined her Navy. Then followed the loss of her trade and her commerce. With this her political greatness was at an end. Since the Peace of Utrecht she no longer counted as one of the Great Powers, her Navy was no longer a factor to be reckoned with in diplomacy, and her trade partook of her general decadence.

In contrast with this, we see the rise of Great Britain whose power

rested on the sea, for the country was of no great extent, with originally few resources. The power of the Navy in cutting off the enemy's reinforcements, while her own communications were kept open, was first displayed by England between 1700 and 1750. The naval power of England was then the chief factor in the history of Europe. Her wars abroad and the prosperity of her people at home depended on this. She built up the great world Empire as it still exists. The Navy of England influenced the issue of Continental wars by means of the subsidies she convoyed. England kept on foot mercenary expeditionary troops, who disembarked or made demonstrations of landing in distant countries, causing their enemy to scatter his forces.

Besides this, she materially damaged her foes by the destruction of their trade. So while Continental States ruined one another, England profited by it, as friend and foe both learned from her increased naval power.

In the middle of the war 1703, the improved condition of England may be seen in the general increase of prosperity, in the fresh issue of gold coinage, in the enormous increase of shipping in the fishing trade and general commerce, of import duties, of manufactures, and, in short, of trade in all its branches.

A well-known historian says that, such national prosperity during a long, bloody, and expensive war was never known before in the history of nations. The value of the prize vessels captured by England in the Seven Years' War was estimated at about £2,000,000 sterling.

The harvest of the seas reaped by England played its part in her colonial wars, for, it was the money poured into India in the time of Clive that led to the expulsion of the French.

Great Britain has made still farther strides in the nineteenth century. The strength of her powerful fleet protecting her merchant vessels made this possible. The latter went whither they would, their guns and their troops closely following them.

Let us now consider France, which offers an example of how the conflicting interests of land and sea may for a long time hamper the development of a great nation. It was a principle of Richelieu's statesmanship to build up a great Navy to increase the prosperity of the Empire, but especially to make head against its hereditary enemy—England.

To carry out this policy was the earnest endeavour of Colbert, that excellent minister who stood at the side of Louis XIV. in his early years as sovereign. His measures embraced all departments of naval supremacy: production, shipping, colonisation, foreign trade. To those nations ambitious for naval power his measures are a worthy study. First he sought to increase the agricultural as well as the manufacturing produce of this country. At sea, skilful attacks were made on the shipping and trade of England and Holland. Great trading companies were formed, and the customs duties were altered in favour of French productions. The harbouring of vessels in the great sea-port towns was facilitated. Dues were laid on foreign cargoes, and a premium given to ships built

at home, while strict regulations were laid down which permitted French vessels alone to trade with French colonies. All this worked together to improve the shipping trade.

In his colonial policy Colbert also advanced with a clear aim in view. He bought back Canada, Newfoundland, Nova-Scotia, and other former French colonies in the West Indies.

The result of all these efforts and arrangements was so great a general improvement in the prosperity of the French, that in twelve years everything that had been in the greatest confusion and decadence when Colbert entered office as Minister of Finance and Naval Affairs was now in a flourishing condition.

French finance and credit had so improved in this short time that the income of the King doubled that of the ruler of England. In those days this was the best test of the state of the finances. Such an increase of ocean foreign trade could never have been brought about without the protection of a powerful fleet. In 1661 France had only 30 armed vessels, in 1667 she had 70 (50 being ships of the line), in 1671 she had 196. The system and order that Colbert introduced into the dockyards rendered these more efficient than those of England.

Mahan draws attention to one defect in Colbert's reforms. These were all carried out in a few years by a system of centralisation essentially French, while those they imitated had taken years of English and Dutch history to effect. Added to which Colbert was not the King, and the success of his measures depended upon the length of time he could manage to remain in office and in favour. Louis XIV. evinced no particular interest in his Navy, a false policy of Continental expansion absorbed all the newly-developed resources of the country. This was doubly injurious, as it left defenceless her trade and her colonies, and thereby gave England the opportunity of cutting off this the greatest source of the wealth of France.

Since that time periods of enthusiasm have alternated with periods of indifference in French naval policy. The result is little progress either as regards Continental expansion or permanent naval improvement. Certainly France would pursue an intelligent policy if she were from henceforth to concentrate and devote all her interests to developing her foreign Empire, and were to listen to Mahan's words. States which have a good sea trade would find it much more profitable to seek progress in naval matters and ocean trade, than in attempting to upset the existing political situation in countries of which the just possession—whether of long or short duration—has given recognised rights, and has created national unity and political concord.

The objective of naval strategy is the enemy's fleet, the organised hostile force, just as in military operations the enemy's field army is the chief objective. If this is defeated, the blow is decisive. But it is interesting to notice how this simple principle deduced from experience was until lately ignored in naval operations.

The same false views of the essence of war, which we see Clausewitz and von Bernharte combating, give rise to Mahan's criticisms as regards

naval war. Like Mack and Langenau, or the military historians after the Seven Years' War, admirals like De Grasse and D'Estaing in the naval wars from 1778 to 1783, and writers of naval history like Ramatuelle, considered the annihilation of the enemy's fleet secondary to success in special expeditions—the occupation of isolated portions of a country ; the carrying out of collateral strategical objects.

Ramatuelle, who wrote on Naval Tactics at the end of the eighteenth century, expressed this. He said :—"The French Navy has always the "merit of having preferred to effect and keep a conquest to the, perhaps, "more brilliant feat of capturing a few ships. She has by this approached "nearer the true object that in war should be steadfastly kept in view. "What would the loss of a few vessels signify to England ? The essential "point is to attack her possessions, the immediate sources of her wealth "and sea-power." Then he recommends the conquest of a few West India Islands. The false ideas that we meet with here, says Mahan, are manifest in the words of "a few vessels." A whole Navy cannot ordinarily be destroyed at a blow. The capturing of "a few vessels" indicates an ordinary naval action. The sum of such actions the destruction of the enemy's naval power. Nothing could better illustrate the fallacy of Ramatuelle's theory than the result of the naval war that he described. In Admiral Rodney's famous action of the 12th April, 1782, which decided British superiority in West Indian waters, the French only lost five war-ships ; but Jamaica was saved.

Who can wonder that, influenced by the views expressed by Ramatuelle, French admirals, who, moreover, always had instructions from home to spare the dear fleet and not expose it, were not always "ready for action," and that the spirit of naval officers suffered. A single exception was Suffren, the French commodore in the Indian Ocean, who seems to have been so imbued with "battle fever" that he was unable to restrain his ardour even when inopportune. On the other hand, the naval successes of the English are, without doubt, to be attributed to their naval policy of always seeking out the enemy's fleet as their main objective ; when found straightway attacking it.

This leads us to the discussion of the offensive in naval warfare. Monk, who may be looked upon as the greatest English naval commander of the seventeenth century, was of opinion that "the nation which aspires to rule the seas must always attack." The English have always remained true to this principle. They saw that their object was to destroy the enemy's fleet—not to save their own. They, therefore, in the days of sailing-vessels, always selected the windward side, which facilitated their attack. The French, on the other hand, preferred the lee side, because they could then damage the enemy by their fire as he advanced to attack ; and could, in case of necessity, better withdraw from the fight and save their ships.

The great Pitt, in a speech in Parliament, characterised this conduct as an indication of certain decay. The impulsive Suffren went still further, and called it veiled cowardice. Who, in reading this, is not reminded of the fatal "regulations" of Marshal Niel to the French Army

in 1870, which skilfully restrained their *elan*, their best military characteristic, and which were among the causes of their defeats in the war!

Through all changes in weapons, or tactics on land and on sea, the initiative and the attack have in the long run proved successful.

The remarks of Mahan on *defensive strategy* are worth reading. This the English adopted in the naval war of 1778-80, owing to their numerical inferiority to the French-Spanish Fleet. He might better have insisted on the superior *quality* of the British, which made up for their slight inferiority in numbers, so that undoubtedly they might have taken the offensive. In long periods of peace we are apt to exaggerate the weight of numbers as well as the powers of the military machine. It is *the spirit* that inspires armies or fleets. That is the motive power of the machine which leads to success. England scattered her squadrons in 1778 in order to leave no point defenceless, and, therefore, never was superior at any one point to the enemy, not even in the English Channel.

It is especially to be remarked that the outcry of the trading world and local interest may easily lead a Government to take false steps. As only France and Spain opposed England, with the exception of the Americans, on their limited theatre of war, it would undoubtedly have been right to have denuded the collateral scenes of operations to assume a preponderance in the English Channel and the Bay of Biscay. At that time England had only two naval foes. Will she be able to-day to withdraw her squadrons from the different quarters of the globe where her powerful interests are at stake, in order to concentrate with overwhelming force against one or two of her opponents?

The plan of operations must, according to Mahan, determine the activity of the Navy in war. Its task, the points on which it should concentrate its power, the establishment of good coaling and supply depôts, the maintenance of communication between these depôts and the base at home, and the destruction of the enemy's made as the principal or as a collateral object.

The main activity of the fleet will, as we have seen, be directed in the first place against the enemy's squadrons. It matters not whether this activity is only collateral matter, as in the case of a war of Germany against France, or part of the main plan, as in a war against a foe who is only to be reached by sea. If the enemy is slower in mobilising than we are, or if the outbreak of war has come upon him by surprise, it will be probably the best plan to blockade his unprepared ships in their ports. That for this purpose a weak fleet is sufficient if only it is animated by the right spirit, was shown by the English in the Napoleonic wars.

It is a question of economy of time and money to be able to develop at the outbreak of a war your whole strength with such rapidity as to deal a crushing blow at the enemy before he can muster in equal strength. In a fight with a superior opponent it should always be an aim to strike at scattered vessels before they can concentrate.

The tardy arrival of the allied squadrons in the English Channel in 1779 was as noteworthy an example of the baneful influence of a

badly organised mobilisation on the subsequent operations, as the imperfect concentration of the French on the frontier in July, 1870.

In order to utilise the fleet as an independent arm, our own harbours must be secured so as to be able to defend themselves. This leads us over the much-debated ground of coast defence. In a war on land we understand clearly how a long line, say a line of railway, may be best protected. We secure its most vulnerable points with local garrisons, and local field defences, and concentrate the main body available for defence in an advanced position, in order to encounter the hostile forces with either offensive or defensive action. Coast defence requires similar action.

The word "defensive" in war includes two ideas which we should always keep distinct, in order to have clear views: passive defence, which simply strengthens its position and awaits its attack; and active defence, the security of which consists in attacking the foe. In coast defence the passive defence consists in local fortifications, submarine mines, and fixed obstacles to detain the enemy on his approach. Active defence comprises all the means and engages all weapons of offence which seek out and attack the enemy's fleet, it may be a few miles from our shores, or it may be on their own coasts. This may appear to be "offensive war," but it is not so. It can only be called "offensive" when the enemy's country is the objective. The confusion of these two ideas leads to much unnecessary dispute as to the functions of Army and Navy in coast defence. The passive defence is the business of the Army. Everything that moves on the sea belongs to the Navy, which has the prerogative of the offensive. If seamen are accustomed to garrison forts, they simply become part of the land forces; and in like manner, troops embarked on board ship belong to the naval forces.

The base of operations of a country with extensive trade is not only in its naval harbours, but in its ordinary seaports also. When we consider the possible preparation in such harbours of *fleets* of transports for expeditions, the fitting-out of unprotected volunteer *trade-destroyers*, the wealth of war material that may be stored there, we see that they require to be strongly fortified. As long as they are not situated right on the sea, but near the mouths of rivers, like most of the German seaports, their defence is comparatively easy.

It must, however, be repeated that we require under any circumstances, for a naval war, land fortresses to cover our home base of operations, which are safe against hostile *coups de main*. Further supporting points on distant shores are necessary. The acquisition of temporary naval stations is necessary at those points where armed ships must follow trading vessels. If we have no colonies or garrisons abroad, our war-ships will be like birds with clipped wings who are unable to fly away from the land. Even sailing-ships require stations along their trade route to replenish provisions, water, etc. Much more do steamers require to replenish their stock of coal. Energetic sea operations are impossible far from coaling stations. It is true that, according to international law, vessels can coal in a neutral harbour. But take the case of a war with

England! "The supply of coal, or such an advantage to a belligerent as facilities for cleaning the bottom of or repairing his ships, would be so unfriendly an act towards Great Britain that it is doubtful if any neighbouring Power would grant it," says Mahan. We might add to this sentence, "As long as that State is in a condition to make its strength felt, as in old times, by neutrals."

The supporting points (pivots), which every State having a largely developed foreign trade requires for its war-ships and merchant-vessels, must become depôts of shipping and war material. Their protection will be better provided for by garrisons, as in Gibraltar and Malta, or depend on the friendliness of the inhabitants. The best depôts are always to be found in one's own colonies, provided these have a trade of sufficient importance, and hold fast to the mother-country.

An excellent example of the importance of such supporting points is that of the Spanish Armada in 1588. The Duke of Parma had tried to impress upon Philip II. the necessity of seizing the Dutch harbours of Flushing before the departure of the Spanish fleet. Had the King listened to this advice, that terrible and fatal route of the fleet round the North of England would have been avoided. England's power at sea depends upon her system of bases of operation which are spread over the world, as much as on her fleet. She has, with admirable insight, secured and fortified the most important strategic points on the great trade routes. She is about to annex Egypt permanently, and thereby secure the command of the Suez Canal. It is worth mentioning, as Mahan points out, that the statesman and philosopher Leibnitz drew the attention of Louis XIV. to the importance of Egypt. It was at the time of Colbert's activity. France possessed a fleet which was at least equal to that of England. Louis could undertake colonial expeditions without risk. He had not yet by his rapacity set the European Powers in array against him. Leibnitz laid before the King a memorandum pointing out that, by taking possession of Egypt, he would obtain the command of the Mediterranean and of the Eastern trade. By this he would gain a greater triumph over England than by the most successful campaign on land. Whoever holds Egypt, he said, commands the coasts and islands of the Indian Ocean. Louis XIV. did not agree with these ideas. Napoleon treated the question later on with greater understanding, but when he wished to carry these ideas into effect, in 1798, the French sea-power was inferior to that of England; and with the permanent occupation of Egypt the command of the sea must inevitably be connected. The importance which Nelson, as well as Napoleon, attributed to the possession of Egypt, owing to its influence on East Indian matters, is evinced by the former sending an officer overland to Bombay after the battle of the Nile, to announce the shattering of Napoleon's hopes.

Will France, now that her naval strength is once more equal to that of England, bethink herself of Leibnitz's memorandum? This much is clear, that, if at this moment of the downfall of Turkey, Egypt and the Suez Canal fall into English hands, the world-wide power of Britain in

the nineteenth century will scarcely be less behind that of the eighteenth. The way to Eastern Asia and Eastern Africa is barred to us, also, and by that a field of much promise for our future commercial and naval policy is cut off.

Supporting points on distant coasts are also necessary as harbours of refuge for cruisers. The existence and justification of these have been a matter of controversy since the time of Admiral Aube. The importance attributed to them is founded on their success in the fifteenth and seventeenth centuries. At the time of Louis XIV.'s Continental wars, when the King, in the last years of the Spanish War of Succession, was no longer able, owing to the enormous expense of his land operations, to make use of his Navy, he withdrew his ships and crews from the seas and gave them over to private companies to carry on privateering with. As a fact, French pirates, under reckless leaders like Jean Bart, Forbin, and Duguay-Trouin, were very successful. However, Mahan has gathered together material which proves that in the first place, though there were great numbers of English captured merchant-vessels, still larger numbers of French prize ships were in English hands; and in the second place, that the employment of cruisers had little effect on the issue of the war. It may well be said that, though it may make a collateral impression, it cannot affect the main issue. For its full development it can only succeed when it relies on the support of an active Navy, which could compel the enemy to concentrate his forces; so cruising may have much effect when the enemy's fleet is destroyed.

The last years of the Seven Years' War offer an example of this after the French fleet had been decisively defeated in the Bay of Quiberon. The whole French and Spanish trade fell into English hands. How very dangerous, on the other hand, a war of cruisers, without the support of battle-ships, was shown by England in the Dutch War of 1667. She put her fleet out of service, laid up her fleet in-ordinary in order to confine action to injuring the enemy's trade. The result was Ruyter's sail up the Thames.

A favourite idea of Admiral Aube, and which has often attracted attention, is that an industrial country like England, dependent for its supplies on foreign countries, could be starved out by a war of cruisers. In this people seem to have forgotten that with the great expense and with the enormous armaments that have to be kept up, modern wars will be of too short duration to enable this theory to be carried into practice. Many valuable lessons may be drawn from the recent engagement on the Yalu as regards the cruiser question.

Every State which wishes to be reckoned as a Naval Power must have in first line a fleet of battle-ships commanding respect. This is the back-bone of its armament; the determining factor in peace negotiations. "Negotiations without weapons," said Napoleon, "are like music without instruments." Germany requires a battle-fleet to protect its rapidly growing foreign trade. It must remain in home waters because, as long as she is the weaker Power, her only chance is for her to

remain concentrated in the presence of her pre-supposed foe. We want cruisers for the honour of the Empire along the coasts of our Colonies, and at certain stations, to protect our Colonial trade. We want them in savage countries, or to make negligent debtors like Greece tremble. Armed cruisers are required in battle also. We also require smaller cruisers of light draught to carry out the duties of the larger vessels, where these are unattainable owing to shoals or other local causes.

The battle-ship will, however, always remain the "ultima ratio" of naval policy. It is more difficult to obtain votes in Parliament for battle-ships than for cruisers. It is but human nature to consider the former as a possible requirement of the far-off future, while the latter is one of present necessity. Such a want of foresight might cost us dear. Mahan attributes the downfall of Holland to the unwillingness of its Government to incur the expense of preparing for war. They thought it would be time enough to spend the money when danger stared them in the face.

As regards the "trade-destroyers," it is a question of unarmed and lightly-armed vessels. They must have great speed, energetic commanders, and an armament capable of coping with other privateers. The armed cruiser will always make the best "trade-destroyer." In this kind of warfare, dispersion, not concentration, of force is the rule. Therefore privateer "trade-destroyers" require foreign ports where they can coal and arm. Even if the news of the outbreak does not reach them before leaving home, or they have not been fitted out as "Flütes"—that is, with their guns (taken to pieces) and their ammunition shipped—ports are necessary for their refuge.

In the wars of the eighteenth century we have seen the importance of Guadaloupe and Martinique as regards the West, and Bombay as regards the East. They became centres of a war of privateering, which ceased when they were captured.

So we may well close this paragraph with Mahan's dictum, "*Naval strategy may win victories even in peace-time by the acquisition of local bases on foreign shores.*"

The natural condition of all sea-power is that goods for export should be shipped on board our own vessels.

History teaches us that where this is not the case, as with the apparently powerful Spain in the sixteenth and seventeenth centuries, that was an artificial power which crumbled at the first blow. In Germany we find a sounder development. Trade has been created, and we have of necessity created a fleet to protect it.

The physical suitability of Germany, with its long sea-board and its good harbours, situated in estuaries which can be easily and cheaply reached by rivers and canals, increasing production, and a well-arranged system of railways, are all favourable to foreign trade. Hubner reckons the imports and exports of Germany amounted to 8,095,000,000 marks, against the 13,133,000,000 marks of England, 6,406,000,000 of the United States, and 5,740,000,000 of France. These figures show that Germany is the second trading nation of the world.

As regards the Merchant Service:—

| | | | | | |
|---|----|----|--------------------------------|-----------------------------|----------------------------------|
| In 1895 Germany had | .. | .. | 3,665 sea-going ships. | | |
| Ditto ditto | .. | .. | 21,318 | } sailing and steamer | { coasting vessels, river. |
| Ditto ditto | .. | .. | 1,530 | | |
| In 1894 Great Britain had | .. | .. | 21,206 vessels. | | |
| (For 1895 the figures are not to hand.) | | | | | |
| In 1895 France had | .. | .. | 15,528, inclusive of coasters. | | |

We see that Germany is overhauling France in actual tonnage, if not in numbers. Its leading port, Hamburg, is only outnumbered by London. Many Hanseatic trading companies have as large a fleet as the great English companies. These are all the growth of twenty-five years. We may say they arose out of nothing. If we remember the commercial and political importance of certain German provinces in the Middle Ages and in the beginning of the present—those days when the pennon of Hansa ruled over the German Ocean, of the successes of Fugger and Welser—we shall hardly deny to Germany the capacity for business and a future as a trading power. That this capacity was not developed sooner is attributable to the political stupor and want of unity which overshadowed Germany, and gave her so small a part to play on the world's stage. France and England took to seamanship as soon as, under Richelieu and Elizabeth, the civil wars were ended and a national State arose.

A nation's trade is influenced by its power. This power is best made manifest to its distant or savage customers by its Navy. It is *the best advertisement* for its trade. Of course, people may say our trade has made good progress during the last twenty-five years, even without much of a fleet. This is true; but it was then helped by the development of Germany's power on land and her political greatness, which made her name known and respected in the most distant countries.

What will, however, become of this trade if in time of war we have no fleet to protect it? It will easily fall a prey to a stronger naval power, as the Spanish trade in the Seven Years' War, and the Dutch trade in the wars of 1778-83 fell, to enrich the English. If, on the other hand, we ship our merchandise on neutral vessels and allow our harbours to be blockaded, it will be more or less lost. Thus we see if a fleet is *trade's best advertisement in peace*, it is *its best protection in war*. Mahan says "a nation's fleet should be in proportion to its merchant service." According to this, we ought to have the second largest Navy in the world. But time enough for this. A Navy cannot be constructed as quickly as a merchant fleet, where so many hands are employed and the hope of gain stimulates efforts. The creation of a Navy is a work of time. For this very reason we cannot begin the work too early, or too thoroughly, as soon as the necessity for it is acknowledged. Ships cannot be built and manned for every eventuality.

A nation which produces much, requires foreign markets and countries for the sale of its goods. The safest are those in its own colonies; the inhabitants then must, however, be able to buy owing to their having

produce or money to give in exchange, as the East Indians were and the Chinese now are. If not, purchasers must be found in colonists.

Every colony must have time for development, especially if it is not, originally, a colony of emigrants.

We cannot yet pronounce any final judgment on the value of the colonies we possess at present in Africa. It is noteworthy how in the last century the great future of India was entirely ignored by the French trading companies of that period. It seems to be established without doubt that certain portions of land in our own colonies are most suitable for German emigrants. We would attract a large stream of other colonists thither by the organisation of our emigration.

In this way England peopled many of her most flourishing colonies. But the best colony will be that which independently attracts to her shores the stream of emigrants without official incitement thereto, where each man may from the first find more favourable conditions for bettering himself than in his own country, which from one cause or another he found too narrow for his views. Losing annually as we do a number of our surplus population, the acquisition of agricultural colonies in a favourable climate is a question of national life and death.

In the last century we were too late to partake of the general partition. But a second partition is forthcoming. We need only consider the fall of the Ottoman Empire, the isolation of China—that new India of the Far East, the unstable condition of many South American States, to see what rich opportunities await us. In order not to miss them this time we require a fleet. We must be so strong at sea that no nation which feels itself safe from our military power may dare to overlook us in partition negotiations, and there is no time to be lost. The money that we spend on our fleet now will bring cent. per cent. interest in increased colonial strength. It is not sufficient that we are strong on land, and have political allies. We cannot stir up a national war for every little piece of ground we want in distant countries, however important its acquisition may be to us.

The armed strength and state of preparation of European Powers being nearly equal, the second partition will probably be a peaceful one. But our right to more extended colonial empire is sure to be ignored, if we do not possess the naval strength by which eventually such colonies could be taken and held.

In Europe, politically speaking, we are satisfied. Whatever future may probably be in store for us, we must still adapt ourselves to the new dignities and responsibilities that the war of 1870-71 bestowed on us. Certainly no greater misfortune can happen to us than that a million of "Französlinge" or citizens of foreign nationalities should grow up contiguous to our western or eastern frontiers. It may be assumed with fair confidence that in the immediate future we shall have no Continental attacks to face. Each year we grow greater than France owing to the mere increase of our population. We have already outstripped her by 14,000,000 inhabitants. Such a factor tells on the continuance of a war. France will never make war against us single-handed. The time will go by, and the mutual interests fostered by hospitality will always

turn the active effect of the alliance against England. It is scarcely any longer a dispersion of strength, if we turn our eyes seawards. For the rest, it would be an advantage in a war with France if we had a strong Navy.

History shows us that every Government requires an active foreign policy to give fresh impulse to the energies of its people, which otherwise might easily find vent in internecine quarrels, and to give them a united object.

We shall naturally arrive at a "grasping" colonial policy. And in doing so England will always stand in our way.

The English nation is in accordance with its national disposition and development extremely sensitive in regard to any agreement on politico-trading ground. Mahan shows how she strongly opposed and coerced Holland, Spain, and France in succession. She has already recognised in Germany her most dangerous rival. Perhaps in the minds of both these nations an idea prevails that the existence of German races can only be seriously endangered by those of like blood. Little Holland has given England more to do than mighty France!

In any case an increasing bitterness against us Germans is perceptible in Great Britain. This is doubly dangerous in a country where Parliamentary liberty of speech is its form of Government, and where the Government easily becomes the shuttlecock of public feeling.

Certainly no Prime Minister possessed such unlimited power as Walpole, in the early part of the eighteenth century. He was opposed to warlike undertakings. The hatred of the English for the Spaniards and French, arising from the English mercantile policy, drove them to war, and swept the ministry from power. We saw the powers of British national feeling lately in the excitement over the Armenian question. The screams of the trading world and the pressure of local interests have often forced the Government to take action against their will. How long will a peace policy last? Decision and tenacity form the basis of the English character. The Briton pursues his object regardless of anything else. Once he has recognised in us a really dangerous rival, he will make friends with all other nations, and eventually fight us. It is attributable to our generally favourable political situation that the differences of opinion that existed between us were peacefully adjusted. England will seek to isolate Germany, and then, on the pretext of some point of dispute arising naturally, or skilfully brought about, another flying squadron will put to sea, or in some distant ocean some captain ready to take the responsibility will be found to give the first shot. Great Britain has never been in want of such men.

It would be a fatal mistake to exaggerate the danger that threatens us from England. Too much combustible matter has been accumulated, and our conflicting interests touch each other too closely. No trust can be placed on alliances or political combinations to set against the danger from England. Such are soon dissolved, and other States besides France would be glad to see the politico-mercantile rival humiliated.

Our own good right hand and a strong fleet can alone help us! This will have to protect our Baltic harbours and seek out the hostile fleets, while our fleet of transports is crossing over to the Island Kingdom.

In the English danger we have an indication of the necessary dimensions of our fleet. Mahan says it is not necessary to be equal to all opponents. It will be sufficient to be able to defeat the strongest of them under favourable circumstances.

Our Navy must be so strong that, after the withdrawal of the cruisers sent to watch foreign coasts, it can successfully cope with the English Squadrons which may be in home waters.

It depends on this, for, in the first place, England will not, under present political circumstances, be able to denude other spheres of interest of war-vessels; and, in the second place, at the very outset of the war it would come to quick, and probably decisive, blows before any distant fleet could take part in the fight.

Only when we have a fleet strong enough for this shall we be safe from oppression.

We certainly do not wish to quarrel, but if it is forced on us we will fight it out honourably. May the German nation become conscious of the great responsibility which it would incur by neglecting to prepare itself by sea as well as by land, while there is yet time to forge its armour! May it never happen to us as to the Dutch Republic, whose citizens would only vote supplies for the Navy when danger stared them in the face; or like France in the eighteenth century, which only began to take an interest in its Navy when the time for making any use of it had irretrievably lapsed!

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Captains—W. H. May to "President" for service at the Admiralty; H. P. Routh to "Calliope"; S. A. Johnson to "Colossus"; A. W. Chisholm-Batten to "Melpomene"; G. R. Lindley, C.B., to "Marathon"; R. W. Stopford to "Alexandra" as Assistant to Admiral-Superintendent of Naval Reserves; W. Marrack to "Royal Oak"; A. Schomberg to "Collingwood." Commander—W. H. Nicholson to "Lightning."

The first-class cruiser "Royal Arthur" left Portsmouth on the 22nd ult. with relief crews for Australia; on her three hours' commissioning trial under natural draught this fine ship made an average of 18·8 knots an hour. The third-class cruiser "Barracouta" has arrived home from the South-East Coast of America, and will pay off at Chatham. The third-class cruiser "Calliope" is commissioned to serve as an additional sea-going training-ship for boys, and will be a tender to the "Northampton." The new second-class cruiser "Iphigenia" left on the 6th ult. for China, to relieve the "Æolus," a sister-ship. The third-class battle-ship "Monarch" left on the 18th ult. for the Cape of Good Hope to relieve the "Penelope" as guard-ship at Simon's Bay. The first-class cruiser "Endymion" and the second-class cruiser "Minerva," with new crews for the "Centurion" and "Rattler," left on the 14th ult. for China in company, and will proceed together to their destination.

THE NAVY ESTIMATES.

The following is a *précis* of the statement, explanatory of the Navy Estimates, 1897-98, presented to Parliament:—

The Navy Estimates for 1897-98 amount to a net total of £21,838,000, as against £21,823,000 in 1896-97.

The progressive increase in the *personnel* is reflected in nearly every vote which is concerned with officers, men, and boys. Naturally it is not only in the vote for pay that more funds are required. The Victualling Vote, the Medical Vote, the Educational Vote show an increase, and with the steady but inevitable growth of the non-effective votes, the cost of the *personnel* exceeds by £344,400 the provision made for the same services in 1896-97. The Works Vote for the coming year exceeds that of previous years by £30,400, and certain miscellaneous votes show an aggregate increase of £19,400. The Ordnance Vote is £131,800 above that of the current year.

On the other hand, Vote 8—the Shipbuilding Vote—shows a decrease of £511,000. In this connection it should be remarked that when the programme of shipbuilding was settled in February last, and its cost distributed over the three years 1896-97, 1897-98, and 1898-99, the sum of £600,000 was transferred to the Estimates of the present year from the year 1897-98 in order to lighten the burden which would be thrown on that year, and at the same time to enable more rapid progress to be made in the realisation of the programme by the larger sum to be assigned to the first year. Taking the two years together, there is no diminution in the amount assigned from the first to the programme now in execution, and to such new ships as it was foreseen would have to be laid down in the coming financial year.

NUMBERS.

The number of officers, seamen, boys, Coastguard, and Royal Marines voted for 1896-97 was 93,750, an increase on the previous year of 4,900. It must be clearly understood that this addition constituted a net increase—that is to say, an increase over and above the entries necessary to make good the annual waste in the various ratings.

The actual number borne on January 1st, 1897, was 92,322, and it is certain that the entries during the remaining months of the year will bring up the numbers borne on March 31st to the total authorised for 1896-97. While the numbers coming forward for most of the ratings have been most satisfactory, some difficulty has been experienced in obtaining the necessary number of engine-room artificers and artisans, owing to the general revival in the shipbuilding trade. This matter is receiving the close attention of the Board.

It is proposed to increase the numbers voted last year by 6,300, bringing up the total to 100,050.

The proposed additions are distributed as follows :—

| |
|---------------------------------|
| 121 officers. |
| 2,400 seamen. |
| 265 engine-room artificers. |
| 2,000 stokers. |
| 1,000 Marines. |
| 514 artisans and miscellaneous. |
| <hr/> |
| 6,300 |

The expansion of the Fleet has necessitated further additions to various classes of officers, and Orders in Council have been obtained authorising increases in the establishments as follows :—Medical officers, from 416 to 450 ; accountant officers, from 470 to 500 ; chaplains and naval instructors, from 129 to 139.

A grade of engineer officers of warrant rank has been established as an encouragement to engine-room artificers who have rendered meritorious service, and at the same time as a step which will contribute towards meeting the growing requirements of the Fleet.

The pay of chief boatmen of the Coastguard will be assimilated to the pay of petty officers, first class afloat, by giving them 2s. 5d. a day after four years' service in that capacity.

As proposed last year, the "Black Prince" has been commissioned as an additional training-ship for boys at Queenstown. This vessel has not yet started her training service owing to delays in the execution of the necessary alterations at that port ; but the service will shortly be commenced.

The entry of youths direct through the sea-going training-ship "Northampton," which was commissioned in 1894, has been continued, and the numbers presenting themselves for enrolment have exceeded expectations. It was, therefore, decided to further develop this source of entry, and the "Curaçoa" was commissioned for this purpose in June, 1896. It is estimated that she will be capable of training about 250 youths in the course of the year. As these youths, who are entered at a somewhat more advanced age, have been reported on as quite satisfactory, and as the system accelerates the increase in the seamen class, it is now intended to employ a third vessel ("Calliope"), capable of producing about the same number as the "Curaçoa." The output from these sources will add about 1,200 to the seaman class in the course of the financial year.

A new arrangement as regards the entry and training of Naval Cadets has been instituted, and will come into force in the present year. It has been decided to gradually raise the age for entering Naval Cadets by one year, and to shorten their course of instruction in the "Britannia" to about 16 months. The examination of candidates for the "Britannia" will be modified accordingly. In future cadets will be entered three times a year instead of twice, which will result in an increased number of entries every year. Under this system about 190 cadets will be passed through the "Britannia" yearly, instead of 125 as at present. It is anticipated that this will ultimately produce about 170 sub-lieutenants each year, instead of 116 as at present.

The "Racer" has been attached as tender to the "Britannia," to replace the "Wave," and during the summer months was continually occupied in cruising.

It is proposed to appoint a committee on the general question of the education and training of junior executive officers afloat after they have left the "Britannia."

The Royal Marines.

The Estimates provide for the addition of a further 1,000 men to the corps. Of this 1,000 men 500 will be for the Artillery and 500 for the Infantry branch of the corps, including nine officers for each branch.

Two thousand seven hundred and seventy-six recruits have been raised during the year. The majority of those entered were youths of from eighteen to twenty years of age, of good average height and stature. The standard height was maintained at an average of 5 feet 6½ inches, with an average chest measurement of 34 inches. A certain proportion were growing lads under eighteen, with a physical equivalent, in most cases, to that represented by the higher age.

Royal Naval Reserve.

The total number of officers now on the Active Lists who have served for twelve months' training in the Navy, or are now serving under training, are:—

| | | | | | |
|-----------------|-----|-----|-----|-----|-----|
| Lieutenants | ... | ... | ... | ... | 114 |
| Sub-Lieutenants | ... | ... | ... | ... | 65 |
| Midshipmen | ... | ... | ... | ... | 4 |
| Total | ... | ... | ... | ... | 183 |

Provision will be made in the coming Estimates to increase the executive officers' list by 100 over the numbers provided in last year's Estimates, making a total of 1,400 officers, besides 300 engineer officers.

The reports received from the captains of ships, with whom the Reserve officers served during the recent manœuvres, reflect great credit upon the Reserve.

In order that engineer officers of the Royal Naval Reserve may acquire a knowledge of the working of engines and boilers used in Her Majesty's ships, arrangements are being made to receive a limited number of these officers for a course of instruction at the home ports.

Opportunities will be given to them to study the construction and repair of machinery in the dockyards, and also the working of the engines and boilers of torpedo-boat destroyers and torpedo-boats, and of other classes of ships when undergoing their trials. The course of instruction will last about three months, and during this period officers will receive the same rate of pay as they would receive if called out for service in the Navy, together with lodging and provision allowances.

It has been decided to make very considerable changes in the conditions of service of seamen of the Royal Naval Reserve, with the view of improving their efficiency. The leading features will be as follows:—

Instead of the present first and second class, two new classes will be constituted—(1) qualified seamen, (2) seamen. First enrolments in, or promotion to, the classes under the old system will cease, but all men already in these classes will be entitled to remain in them as heretofore and retain the same emoluments.

All seamen who enter the Reserve in future will join the lower or "seamen class," except men who have been discharged from the Royal Navy after completing their first continuous-service engagements.

Men enrolled in the "seamen class" will be entered under the same conditions as to age and service, and with the same rate of pay and allowances as the present second-class men. They will be called upon within their first term of enrolment to enter upon a period of six months' training in the Royal Navy, and failing to carry out this training will not be retained in the Reserve.

Upon the completion of six months' naval training, men will be advanced to be "qualified seamen" under certain conditions as to character, health, and capacity. The pay and allowances of men in this class during their active period of service

in the Reserve will be the same as those of men of the present first class. Such men as complete a subsequent period of six months' satisfactory training in a man-of-war, or two periods of three months each, making twelve months in all while in the Reserve, will become entitled to receive a pension of £12 a year on reaching the age of 60. Except in special circumstances, men over 35 years of age will not be accepted for a second or third period of training.

Men who have served their 10 or 12 years' continuous service engagements in the Royal Navy, and have been discharged with a good character, and rating not lower than that of A.B., will be entered as "qualified seamen," and will be able to earn a pension of £12 a year, payable on reaching the age of 60, by length of service in the Reserve without any further training in the Royal Navy.

In the event of men now in the first-class volunteering for naval training, they will receive pay as on the existing scale, and will, in addition, be granted a naval training gratuity of 10s. a month, which will be paid on the completion of their training.

Men now in the second class will be able to obtain promotion to the new "qualified seamen" class in the same manner, and subject to the same conditions, as men in the new "seamen" class. Those who have already served six months in the Navy, and are otherwise qualified, will be promoted to the "qualified seamen" class. Service in the second-class Reserve, or in the "seamen" class will count as full time towards pension.

It is proposed to raise the number of men voted by 1,100—i.e., 600 of the seamen class and 500 firemen, making a total of 22,000 seamen, 3,000 firemen, and 300 boys. When the new scheme is in full operation, men will be entered only in the ratings of the new class.

Provision has been made in the Estimates for embarking 1,200 men for six months' training in 1897-98, which would be equal to 600 men always afloat.

Good reports have been received in regard to the training of officers and men on board the modern cruisers at North Shields and Southampton, and it is proposed to extend the system. The replacement of the "President" by the second-class cruiser "Apollo" will be one of the first steps taken in the coming financial year.

The drill-ships and batteries will be supplied during the year with the new Lee-Metford rifle, and it will then be possible to instruct the Royal Naval Reserve in the use of this modern weapon.

Five hundred and ninety men were embarked for service during the 1896 manœuvres in 24 different ships, and their conduct and ability, as recorded on their certificates by the captains of the ships in which they served, have been very satisfactory. Favourable reports also have been received from Her Majesty's ships in regard to the conduct and ability of the men who have completed six or twelve months' training in the Navy.

An arrangement has been made by which men of the seamen pensioner Reserve holding higher gunnery and torpedo ratings will in future once in every three years carry out their annual 14 days' drill at their nearest gunnery or torpedo school, instead of at the local batteries or drill-ships.

MOBILISATION.

The torpedo school proposed for Sheerness-Chatham last year has now been established.

The number of vessels and torpedo-boats taking part in the summer manœuvres of 1896 was 105, manned by 20,500 men, as compared with 75 vessels, manned by 17,344 men, in the 1895 manœuvres.

A number of the older ships on foreign stations have been relieved by larger modern vessels of greater speed and carrying more powerful armaments.

There are at present 25 torpedo-boat destroyers in commission. Of these five have been sent out to the Mediterranean and two to the China Station, where they are attached as tenders to various battle-ships and cruisers. Eighteen are

distributed between the home ports for instructional purposes, the crews being frequently changed with the object of securing the training of as many men as possible in this special service.

In view of the increase of the squadron in Chinese waters, a Rear-Admiral has been sent out as second-in-command on that station.

In continuance of the policy of commissioning the new ships as soon as they are ready for service, the following further changes will be made in the course of the coming year:—Another first-class battle-ship (of the "Majestic" class) will be added to the Channel Squadron. Four battle-ships of the same class will replace in the Channel Squadron others of the "Royal Sovereign" class, which will be sent as reliefs to the Mediterranean. The battle-ships so relieved will take the place of older ships in the Coastguard and naval ports at home.

Shipbuilding in 1896-97.

Battle-ships.

At the commencement of the year the "Renown" and seven vessels of the "Majestic" class were in hand. Of these the "Prince George" and "Victorious" have been completed, the former being in commission with the Channel Squadron. The "Renown" is also ready for service if required. She has not yet been passed into the Fleet Reserve, as new propeller blades are being fitted—a work which will be completed very shortly.

The "Mars" and "Jupiter" have been delivered by the contractors five months within their contract dates. The steam trials will be at once proceeded with, and the work remaining to be done, which chiefly affects the installation of the armament, will be rapidly completed, so that these vessels will be ready for service in the summer of this year.

The "Cæsar," "Illustrious," and "Hannibal" have been greatly advanced, and will be completed towards the autumn.

Five battle-ships of the "Canopus" class have been commenced in 1896-97; three of these are building in the dockyards and two by contract. All of them are in comparatively early stages of construction, but are being rapidly pushed forward.

The "Ocean," one of this class, is in construction at Devonport, that yard having been equipped for building vessels of the largest class—a position which it formerly held, although for many years past such vessels have been built only at Portsmouth, Chatham, and Pembroke.

First-class Cruisers.

The "Powerful" and "Terrible" were delivered by the contractors about six months within their contract dates. The steam trials extended over a considerable period. The ships have now been practically completed, and the "Powerful" will be commissioned at an early date. Though in many features these vessels go beyond precedent, the intentions of their design have been completely realised or exceeded in regard to draught, stability, and speed.

The four first-class cruisers of the "Diadem" class, laid down in 1895, have been satisfactorily advanced. Difficulties in regard to the delivery of boiler tubes have interfered somewhat with the progress of the work up to date. These difficulties have now been surmounted. The three contract ships of the class, apart from unforeseen contingencies, will be completed considerably within the period of their contract. The "Andromeda," at Pembroke, has also made good progress, but the date of her launching has been postponed in consequence of the retarded delivery of the boilers.

Four new vessels of the "Diadem" class have been begun during 1896-97 in accordance with the programme. The designs are in substantial agreement with those for the "Diadem" as regards structure, armament, and protection. Certain improvements have been made in the propelling apparatus and in details of construction based upon more recent experience.

Second-class cruisers.

Nine vessels of the "Talbot" class were in construction at the commencement of the year. Of these, seven will be completed before the financial year closes, and two will be completed in April next. Two of the class are already in commission, and a third will soon be in service.

So far as experience has gone, the intentions of the design have been more than realised in this important class, the estimated speeds having been considerably exceeded, and the conditions of draught and stability fully realised. On her first passage across the Atlantic the "Talbot" met with exceptionally heavy weather and proved herself to be an excellent sea-boat.

During 1896-97 three new vessels of this class have been ordered by contract which, while resembling their predecessors in form, displacement, and coal endurance, have been given a more powerful armament, water-tube boilers, and a higher speed, without any sacrifice of other qualities.

The four vessels of the "Arrogant" class building in the dockyards have been hindered by the delays in the delivery of their water-tube boilers, but it is anticipated that the leading vessel will be finished next summer, and that all the vessels will be ready for service during the coming financial year.

Third-class cruisers.

Eight vessels of the "Pelorus" class have been in hand during 1896-97. The "Pelorus" herself has been completed and tried. The intentions of the design have been realised or exceeded in regard to speed, draught, and stability.

Progress on the five contract-built vessels of this class has been, as in other cases, considerably affected by difficulties in the delivery of boiler-tubes. These have now been surmounted, the work is progressing rapidly, and during the next financial year all the vessels will be completed.

Torpedo-boat Destroyers.

At the date of the last statement 90 vessels of this class were built, building, or to be ordered in 1896-97. Forty-two of these were of the earlier type with contract speeds of 26 to 27 knots; 45 have contract speeds of 30 knots and three have contract speeds of 32 to 33 knots.

Six of the first group are not yet delivered, the contractors having experienced a difficulty in realising the contract speed. In all other respects they are practically complete.

Of the 45 vessels in the second group 24 have been launched, five have successfully undergone their speed trials, and four have been delivered. A considerable number of those which have been launched are far advanced, but have not yet completed their speed trials.

Progress on the 30-knot destroyers has not been so rapid as was originally anticipated by the firms carrying out their construction, all of whom had successfully fulfilled the conditions of their earlier contracts for destroyers. Experience has in fact proved that with each successive increase in speed new and unforeseen difficulties have to be surmounted, but there is every reason for anticipating that success will be finally achieved in all the vessels. During the coming financial year all the vessels of this type should be delivered and tried.

The three vessels of still higher speed above mentioned are necessarily experimental in their character. Their construction has been undertaken by firms of large experience, and the guaranteed conditions will no doubt be fulfilled.

Shallow-draught Steamers.

During 1896-97 it was decided to undertake the construction of a flotilla of very light draught vessels suitable for river service and built in such a manner as to be readily transported on board ship or on shore.

The vessels are of two types, differing only in size and speed. Six of the smaller type are in hand and two of the larger; and it is anticipated that they will all be completed by the early autumn of 1897.

NEW SHIPBUILDING PROGRAMME.

In the coming financial year it is proposed to commence four battle-ships, three third-class cruisers, two sloops, four twin-screw gun-boats, and two torpedo-boat destroyers.

A new yacht for Her Majesty the Queen is to be laid down at Pembroke. The design is now in hand.

Of the foregoing vessels, three battle-ships, the three cruisers, and the two sloops will be built in the dockyards; the remaining battle-ship, the four gun-boats, and the two torpedo-boat destroyers will be built by contract. The propelling machinery and boilers for all the vessels, except for two third-class cruisers and one of the sloops, will be ordered from private firms.

The three battle-ships to be built in the dockyards will be laid down as soon as the slips now occupied by the "Canopus," "Goliath," and "Ocean," which will be launched towards the end of the year, will become vacant.

Summary of New Construction.

From the preceding statements it will be seen that (including new orders) the following vessels will be under construction or completing during the course of 1897-98:—Fourteen battle-ships, eight first-class cruisers, nine second-class cruisers, ten third-class cruisers, two sloops, four twin-screw gun-boats, fifty-two torpedo-boat destroyers, eight light-draught steamers for special service, and one Royal yacht.

Thus the total number of vessels of all classes under construction during the year will be 108. Their aggregate displacement tonnage will be about 380,000 tons, and the aggregate I.H.P. about 800,000-H.P. It is anticipated that during the next financial year 66 of these vessels will be completed for service, including 50 torpedo-boat destroyers.

Reconstruction, Repairs, etc.

The following vessels among others have undergone large repairs and refits at the home yards during 1896-97:—"Edgar," "Royal Arthur," "Aurora," "Leander," "Amphion," "Magicienne," "Beagle," "Egeria," and "Nymphe."

Seven battle-ships and eight cruisers have been re-armed with Q.F. guns during the year.

Machinery and Boilers.

The following vessels have satisfactorily completed their contract steam trials during the present financial year:—

First-class battle-ships—"Renown," "Victorious," "Prince George." First-class cruisers—"Powerful," "Terrible."

Further, seven second-class cruisers, one third-class cruiser, seven torpedo-boat destroyers of 27 knots speed, and five torpedo-boat destroyers of 30 knots.

The aggregate I.H.P. of the above-mentioned vessels is 220,000, of which about one-fourth is in destroyers.

The trials of the "Mars" and "Jupiter," of the remaining two second-class cruisers, and of several destroyers, will probably be completed before the end of the current financial year.

In nearly all cases the steam trials of the larger ships have been quite successful. No trouble has been experienced with the water-tube boilers of any new ship, nor any serious difficulty with the machinery. Small adjustments and corrections have been found necessary in a few cases, but these were readily effected; and it is one of the chief purposes of these trials to ascertain and correct such minor defects.

The steam trials of the "Powerful" and "Terrible" were of exceptional interest, both on account of the magnitude of the power developed and of the application of water-tube boilers on so large a scale. The conditions of the contact in regard to the development of power were most satisfactorily fulfilled in both vessels.

In the case of the "Terrible," some considerable delays, consequent on adjustments required in the engines, occurred during the preliminary trials. The

final steam trials were remarkably satisfactory, as the following statement shows: The trials preceding the high-speed ones were made on the 6th of January; the thirty hours' trial at 18,000-H.P. commenced on the following day, and was completed on the evening of the 8th of January; and the eight hours' trial (at the maximum of 25,000-H.P. for four hours and at 22,000-H.P. for the following four hours) was successfully completed on the 9th of January.

The trial of the "Pelorus" with water-tube boilers, of the type hitherto chiefly used in destroyers, was also of great interest and was completely successful.

Experiments are also in progress in torpedo gun-boats with boilers of the Niclausse, Babcock and Wilcox, and Mumford types, with a view to gaining further information.

Armour Plate Experiments and Manufacture.

During the year very extensive experiments have been made on armour plates supplied for the purpose of fulfilling conditions laid down by the Admiralty for governing future supplies. These conditions have embodied a higher standard than the corresponding conditions in former contracts. The results have shown that British manufacturers continue to hold the same good position in relation to their foreign competitors as they have held in the past.

The contracts for the armour of the vessels of the "Canopus" class have embodied this higher standard. They involve changes in the plant and processes of the makers, but there will be no difficulty in making these changes and proceeding with the manufacture, so as to keep pace with the progress of the ships.

During the present financial year the manufacturers have successfully met the large demands of the Admiralty, including much work of a specially difficult character.

Naval Ordnance.

The manufacture of 12-inch and other wire guns is proceeding satisfactorily. Improvements in design are being continuously effected.

The conversion of 6-inch and 4-inch breech-loading guns to Q.F.'s is proceeding rapidly.

The final trials of the 9·2-inch guns of the "Powerful" and "Terrible" have not yet taken place, but the guns have been mounted and worked.

Cordite has come into very general use for breech-loading wire guns and Q.F. guns as well as for small arms. Its employment will be still further extended as the present stocks of gunpowder are reduced.

Lee-Metford magazine rifles have been supplied to all ships and to the Royal Marines. Their supply will be extended to the Coastguard and the Royal Naval Reserve batteries during the year. Some delay has been caused by the difficulty of finding ranges suitable for the new arm.

Gun Mountings.

Continuous attention has been devoted to the improvement of the appliances for mounting and working all kinds of naval guns.

The hydraulic mountings for the 12-inch barbette guns of the "Majestic" class have proved most successful. The preliminary trials of the mountings for the "Cæsar" and "Illustrious" have been satisfactory. Further improvements have been made in the designs of the mountings of the 12-inch guns in the battle-ships of the "Canopus" class.

The mountings of the 9·2-inch guns of the "Powerful" and "Terrible" are of a new type, capable of being worked either by manual power or by electricity. The trials so far made of the electrical appliances promise well for the further development of that system of working guns.

NEW WORKS.

Progress under Naval Works Acts, 1895-96.

(A)—Enclosure and Defence of Harbours.

Gibraltar.—On the "Admiralty Mole" extension a length of 860 feet has been brought up to low-water level, and 116 feet more to 10 feet below low-water level.

The rubble mound forming the base of the detached mole is in progress, and about 206,000 tons of stone have been deposited on the site. Two dredgers are at work deepening the harbour.

Portland.—The railways and incline from the quarry have been relaid, and the new shipping jetty is completed. The construction of the new breakwater between the Dolphins has been begun.

Dover.—The survey and plans have been completed, and are now under consideration by an inter-departmental committee, composed of representatives of the Admiralty, the War Office, and the Board of Trade.

(B)—*Adapting Naval Ports to Present Needs of Fleet.*

Deepening harbours and approaches.

Chatham.—The work provided for under the loan has been completed.

Portsmouth.—The dredging of the bar is finished. The rest of the work is being proceeded with.

Devonport.—Good progress has been made.

Keyham Dockyard Extension.—The contractor is making satisfactory progress.

Portsmouth Docks.—The two new docks have been completed and are in use. The railways and approaches will be finished as soon as the ground has sufficiently consolidated.

Gibraltar Dockyard Extension.—The site of the new dockyard is being embanked and reclaimed. The excavation of the New Mole Parade is practically finished.

The lengths of the docks as finally settled are :—No. 1 (double) dock, 850 feet ; No. 2 dock, 550 feet ; No. 3 dock, 450 feet.

Hong-Kong Dockyard Extension.—Owing to the length of time occupied in communicating with such a distant station, and to the necessary negotiations with other departments, it has not been found possible to commence the work as yet, but it is hoped that plans will be shortly settled, and the work will then be put in hand without delay.

(C) *Naval Barracks, &c.*

Chatham Naval Barracks.—The necessary land has been acquired. The reconstruction of the Brennan Torpedo Factory, which occupies part of the site, is proceeding, and the new buildings will be begun early in the summer.

Portsmouth Naval Barracks.—The War Office are arranging for the transfer of the Anglesea Barracks at an early date. Plans for the new naval barracks are under consideration.

Keyham Naval Barracks.—The plans have been approved and tenders will shortly be invited.

Chatham Naval Hospital.—Considerable difficulty was experienced in finding a suitable site for the hospital not too far removed from the naval establishments, but land has now been acquired, and plans for the hospital are being prepared.

Walmer Marine Dépôt.—The new buildings have been completed and handed over for occupation.

Keyham Engineer Students' College.—The new wing will be completed about April next.

Dartmouth College.—Much time was spent in an endeavour to arrange terms of purchase for the site selected by friendly negotiation with the representatives of the owners of the land, but unfortunately without success. Steps have now been taken to acquire the land under the provisions of the Naval Works Act of 1895.

Magazines.—The North George Magazine at Gibraltar is nearly completed, and the new magazine at Corradino (Malta) is more than half finished.

Provision will be made in a Bill to be submitted to Parliament for the continuation of the unfinished works contained in the schedule of the Naval Works Act, 1896, and for certain new works which Parliament will be asked to sanction. The Bill will also include provision for the completion of the improvements to the dockyards at Pembroke and Haulbowline, which are already in progress.

February 22nd, 1897.

GEORGE J. GOSCHEN."

The following is an abstract of the Navy Estimates for 1897-98, and a comparison, showing increases and decreases, with the corresponding votes for last year :—

| Votes. | | Net Estimates. | | Difference on Net Estimates. | |
|--------|--|----------------|----------------|------------------------------|-----------|
| | | 1897-98. | 1896-97. | Increase. | Decrease. |
| | I.—Numbers. | Total numbers. | Total numbers. | Numbers. | Numbers. |
| A | Total number of Officers, Seamen, Boys, Coast Guard and Royal Marines | 100,050 | 93,750 | 6,300 | — |
| | II.—Effective Services. | £ | £ | £ | £ |
| 1 | Wages, etc., of Officers, Seamen, and Boys, Coast Guard and Royal Marines | 4,696,000 | 4,419,800 | 276,200 | — |
| 2 | Victualling and Clothing for the Navy | 1,384,600 | 1,369,600 | 15,000 | — |
| 3 | Medical Establishments and Services | 161,400 | 156,200 | 5,200 | — |
| 4 | Martial Law... .. | 10,600 | 10,600 | — | — |
| 5 | Educational Services | 85,600 | 81,300 | 4,300 | — |
| 6 | Scientific Services | 66,700 | 63,300 | 3,400 | — |
| 7 | Royal Naval Reserves | 249,900 | 229,800 | 20,100 | — |
| 8 | Shipbuilding, Repairs, Maintenance, etc. :— | | | | |
| | Section I.—Personnel | 1,996,000 | 2,104,000 | — | 108,000 |
| | Section II.—Material | 2,024,000 | 2,251,000 | — | 227,000 |
| | Section III.—Contract Work | 5,210,000 | 5,386,000 | — | 176,000 |
| 9 | Naval Armaments | 2,675,000 | 2,543,200 | 131,800 | — |
| 10 | Works, Buildings, and Repairs at Home and Abroad | 648,800 | 618,400 | 30,400 | — |
| 11 | Miscellaneous Effective Services | 195,400 | 189,200 | 6,200 | — |
| 12 | Admiralty Office | 243,600 | 236,800 | 6,800 | — |
| | Total Effective Services ... | 19,647,600 | 19,659,200 | 499,400 | 511,000 |
| | III.—Non-Effective Services. | | | | |
| 13 | Half Pay, Reserved, and Retired Pay | 749,500 | 749,000 | 500 | — |
| 14 | Naval and Marine Pensions, Gratuities, and Compassionate Allowances ... | 1,053,200 | 1,030,100 | 23,100 | — |
| 15 | Civil Pensions and Gratuities | 327,400 | 324,400 | 3,000 | — |
| | Total Non-Effective Services | 2,130,100 | 2,103,500 | 26,600 | — |
| | IV.—Extra Estimate for Services in connection with the Colonies. | | | | |
| 16 | Additional Naval Force for Service in Australasian Waters—Annuity payable under | 60,300 | 60,300 | — | — |
| | Grand total | 21,838,000 | 21,823,000 | 526,000 | 511,000 |
| | Net Increase | | £15,000. | | |

BRAZIL.—The two small coast-defence battle-ships building for this Government at the La Seyne Yard, near Toulon, are to be called the "Marshal Deodoro" and "Marshal Ypiranga." Their dimensions are to be as follows:—Length, 267 feet 6 inches, beam, 48 feet; displacement, 3,162 tons with a draught of 13 feet 2 inches. Protection will be afforded by a water-line belt of 13·7 inches of nickel steel tapering, however, to about half that thickness at the bow and stern. and by an armoured deck 1·3 inches thick. There will also be a central redoubt protected with 2·8-inch nickel steel armour and two armoured turrets 8 inches thick, one forward and one aft, for the two heavy guns, which will be 24-centimetre (9·4-inch) Canet guns; four 12-centimetre (4·7-inch) Q.F. guns will be mounted in the redoubt, and two 15-centimetre (5·9-inch) howitzers on the spar-deck, with four 6-pounder, two 1-pounder Q.F. guns, two machine guns, and two submerged tubes. The engines will develop 3,400-I.H.P., steam being supplied by Lagrafel d'Allest water-tube boilers, and the speed is to be 15 knots. The coal storage will be 236 tons, and the crew will consist of 200 officers and men.—*Mittheilungen aus dem Gebiete des Seewesens.*

FRANCE.—The following are the principal promotions and appointments which have been made: Rear-Admirals—A. E. M. De Penfentenyo de Kervéréguin to be Chief of the Staff of the Active Squadron of the Mediterranean Fleet, vice Rear-Admiral A. P. L. Bienaimé; Aubry de la Noë to be Chief of the Staff of the 1st Arrondissement Maritime (Cherbourg); C. A. L. F. M. Gigon for service at Cherbourg. Capitaines de Vaisseau—J. J. Lefevre for service on the General Staff and as Chief of the Military Cabinet of the Minister of Marine; F. J. Pissère to "Carnot"; X. A. Foret to "Jauréguiberry"; C. T. R. Rouvier to "Charles-Martel"; T. A. E. Testard to "Melpomène." Capitaines de Frégate—Dufayot de la Maisonneuve and A. A. L. Bonifay to Capitaines de Vaisseau; E. P. Simon to "Linois"; H. V. Dutheil de la Rochière to "Condor"; P. P. A. Donin de Rosière to "Vautour"; F. A. V. Journet to "Flamme"; J. G. Revertégat to "Bugeaud"; P. Auvert to "Manche"; A. Somborn to "D'Iberville."—*Le Moniteur de la Flotte.*

The first-class battle-ships "Jauréguiberry" and "Carnot" were commissioned at Toulon on the 16th ult. and 1st inst. respectively, and the "Charles-Martel" was commissioned at Brest on the 20th ult., and they are to be attached to the Active Squadron of the Mediterranean fleet, the "Jauréguiberry" becoming the flag-ship of Rear-Admiral Dieulouard, commanding the Third Division of the Active Squadron, in place of the "Magenta." The "Jauréguiberry" on her last full-speed trials maintained a mean speed of 17 knots. The first-class battle-ship "Hoche," having had the tubing of her boilers repaired at the arsenal at Cherbourg, has now moved into the outer harbour and re-hoisted the flag of Vice-Admiral Parrayon, commanding the Squadron of the North. The coast defence battle-ships "Amiral Tréhouart" and "Bouvines" are having the port holes in their turrets enlarged, to allow of greater elevation being given to the guns. As the turrets are plated with 17·7-inch chrome steel, the operation is not an easy one. The first-class cruiser "Jean Bart" has had her military masts removed and replaced by pole masts, experience having shown that the military masts make her such a conspicuous object as to reveal her presence at great distances. The light guns mounted in the tops have been distributed along the upper works, and platforms have been placed on the masts from which the electric search-lights will be worked. Overtime is being worked at the arsenal at Brest on the battle-ship "Charles-Martel" and the cruiser "Jean Bart" to get them ready for service.

At the official trials of the cruiser "Pothuau" off Cherbourg, on 20th February, 10,378-H.P. was obtained, giving a speed of 19·2 knots. The trials were finally concluded on 27th February with satisfactory results. Regarding the defective boilers of the "Fleurus," reported in last month's Notes, it is now proposed to accept the vessel at the reduced H.P., imposing a penalty on

the contractor. As this vessel is officially designated a torpedo-boat destroyer (*contre torpilleur*), and her utmost speed will now be only 17 knots, she will not be a valuable acquisition to the fleet. The trials of the sea-going torpedo-boat "Corsair" have been interrupted at Toulon by defects in the machinery. The new third-class cruiser "Galilée" will be ready to commence her trials at Rochefort on 1st March. The cruisers "Chanzy" and "Latouche-Tréville," now attached to the Reserve Squadron, are to be commissioned with full crews. The cruiser "Bugeaud" has returned to Toulon, her place being taken in the Levant by the cruiser "Suchet." After completing her defects, the "Bugeaud" will join the Active Squadron of the Mediterranean fleet under Vice-Admiral de Cuverville.

The Reserve Squadron of the Mediterranean fleet recently carried out some manœuvres which had for their object the defence of the coast of Provence against an enemy, represented for the occasion by the mail steamers coming from Algeria. The exercise lasted five days, giving valuable practice and instruction to the crews of the ships in scouting, keeping touch with the enemy and communicating information by means of distant signalling by a chain of cruisers; the defending squadron had also to guard against torpedo-boat attacks, by the boats of the "Défense Mobile," representing for the time being the hostile torpedo-flotilla. The operations were under the immediate direction of Vice-Admiral Humann, Rear-Admiral Godin commanding the Cruiser Squadron.

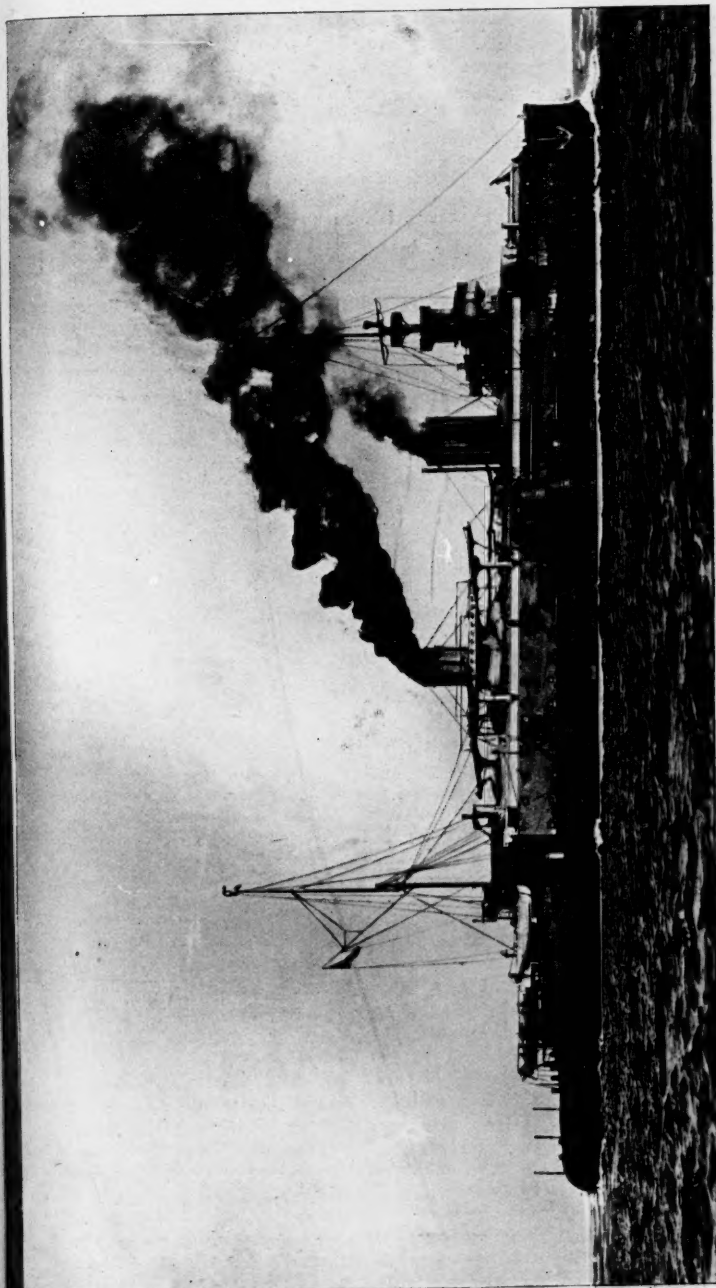
"L'École supérieure de Guerre de la Marine" appears to be about to undergo a further change. As we have previously stated, this naval staff college was first instituted by the late Minister of Marine, M. Lockroy, and was then located on board a special squadron of three first-class cruisers, under the command of a rear-admiral. Before the school thus constituted had had a fair trial, a change of Government took place, and the new Minister of Marine decided to abolish the special squadron, chiefly on the ground of the inconvenience of having three of the best cruisers detached from the fleet and unavailable for ordinary duties, and to organise the school on shore, Paris being chosen for its location, as it was considered that better scientific instruction could be obtained there. A presidential decree approved of the new plan, and the school was duly inaugurated in Paris, and formally opened by Vice-Admiral Besnard, Minister of Marine, on 1st December last, under the new title of "École des hautes études de la Marine."

The capital was thought by many to be unsuitable for such an establishment, and the whole matter has since been under the consideration of the Commission de la Marine in the Chamber, and the first reading of a new scheme reverting to the old name of "École supérieure de Guerre" has been approved.

By this new proposal, which appears to be a compromise of both the former plans, the duration of the course will be two years, the first year to be spent at a naval staff college to be established on shore at Toulon, and the second year in practical work embarked in a squadron of cruisers specially detached as before under a rear-admiral.

At the end of the two years' training those officers who pass the final examination will be "brevetés" and selected for staff appointments; they will also have reserved for them one third of the naval commands available for officers of the rank which they hold or attain to; thus a staff college graduate throughout the whole of his service in the Navy will be in an exceptionally favourable position.

As regards the objection to having a division of cruisers specially detached from the fleet, the Commission heard the evidence of Rear-Admiral Fournier, lately in command of the division of cruisers of the "École de Guerre," and of Vice-Admiral de Cuverville, now in command of the Mediterranean fleet. The former insisted on the advantage of a separate division of cruisers, and stated that a school constituted in this manner was alone capable of developing in the officers the necessary aptitude for command; while the latter considers that it would be advantageous to the fleet to have in commission a separate division of cruisers, whose services would be very valuable in time of war.



J. J. K. & Co., London.

The New French First-class Battle-ship "CARNOT," 12,000 tons, 14,000 I.H.P.

[See Naval Notes, page 343.]

From an instantaneous Photograph by M. Bar, of Toulon.



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Vice-Admiral Besnard, Minister of Marine, and Rear-Admiral Roustan, the present director of the school at Paris, naturally object to any further changes, and prefer the present organisation.

Vice-Admiral Besnard, Minister of Marine, has informed the French Chamber, that he considers it necessary to raise the number of naval lieutenants to 800, and suggests to ameliorate the position of lieutenants of fourteen years' seniority, that the appointments of second in command of certain of the cruisers should be reserved for them, and that they should mess with the superior officers.—*Le Moniteur de la Flotte* and *Le Temps*.

The new first-class battle-ship "Carnot" (see Frontispiece) which has just completed her trials, was launched from the Mourillon Yard, near Toulon, in July, 1894, three years and a half after her keel-plate was laid. The dimensions and principal characteristics of the ship, constructed from the plans of M. Saglio, Director of Naval Construction, are as follows:—

| | | |
|--|----------------|--------------------|
| Length on the water line ... | 116·00 metres. | 380 feet 6 inches. |
| Maximum beam ... | 21·50 " | 70 " 6 " |
| Draught of water aft ... | 8·00 " | 26 " 3 " |
| Displacement at load draught, 12,000 tons. | | |

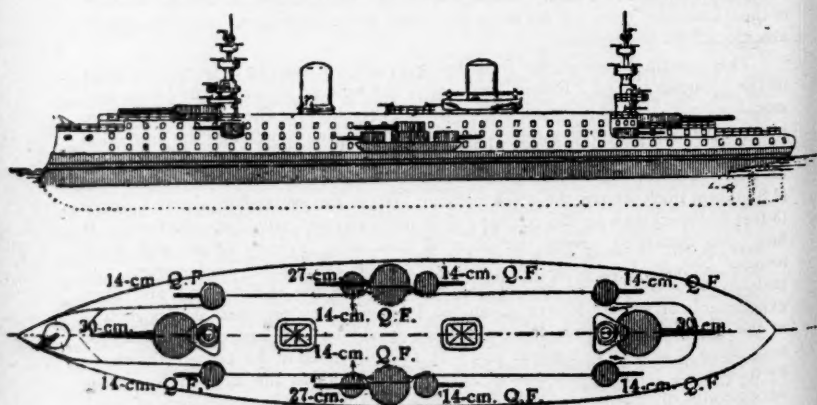
Her armament consists of two 30-centimetre (11·8-inch) guns in two revolving armoured turrets placed in the line of keel, one near the bow the other at the stern; two 27-centimetre (10·6-inch) guns in armoured revolving turrets one on each broadside, about the centre of the ship's length; eight 14-centimetre (5½-inch) Q.F. guns, each mounted on an armoured revolving platform; four 65-millimetre (2·56-inch), eighteen 47-millimetre (1·8-inch), and six 37-millimetre (1·45-inch) Q.F. guns; with four launching tubes for torpedoes, two above water forward above the protective deck and two submerged in the centre of the ship corresponding with the position of the 27-centimetre guns. The ship is propelled by two triple-expansion engines, with a total of 12,000-I.H.P. under natural draught and 14,000 with forced draught. There are twelve water-tube boilers of the D'Allest type, arranged in pairs in six compartments; and she has a bunker capacity of 500 tons; with this supply the ship has a range of 3,000 miles at a speed of 10 knots. On her trials she averaged 17 knots with natural and 18 knots with forced draught.

Like most French battle-ships, the "Carnot" is a ship of high freeboard; she has three habitable decks above the water-line, and has, therefore, one of the most important qualifications for keeping the sea in all weathers and developing to the full her fighting capacity. Protection is afforded by an armour-belt at the water-line from stem to stern-post. The upper edge of this belt, which at the middle of its length is 55 centimetres (1 foot 10½ inches) above the water-line, varies in thickness from 45 centimetres (18 inches) in the central portion to 35 centimetres (14½ inches) at the extremities. The lower edge, 1·70 metres (5 feet 5 inches) below the water-line, has a thickness of 25 centimetres (10½ inches) at its central part. The armour is secured to a wood backing, and is in relief as regards the general surface of the hull. The protective deck, 70 millimetres (2¾ inches) thick, rests on the upper edge of the belt, and is carried uninterruptedly from one end of the ship to the other. This protective deck is considerably arched, so that at the middle line it reaches a height of 1·2 metres (3 feet 8 inches) above the water-line, and forms the upper limit of the hull proper. A longitudinal watertight bulkhead extends through the engine-rooms, boiler-rooms, and magazines, etc., for the central turrets. Two lateral longitudinals extend nearly the whole length of the ship in the double bottom. The longitudinal bulkheads forming the coal bunkers provide a third watertight shell at this part of the ship.

A second belt, placed above the water-line belt previously described, extends the whole length of the hull; its height in the middle is 1·15 metres (3 feet 5 inches),

so that its upper edge is here about 1·70 metres (5 feet 5 inches) above the water-line. Its thickness is 100 millimetres (4 inches). Inside this belt a complete cofferdam is constructed. It will be noted that in all the battle-ships of the French Navy the sides "tumble home" strongly above the water-line belt, and this feature has been considerably accentuated in the "Carnot"; so much so, that at the centre of the upper deck the width of the ship is barely half of what it is at the protective deck below. The curve inboard takes place principally at the first or lower deck, and this allows the two groups of central turrets for the guns to be placed one on each side outboard, without the necessity of projecting platforms beyond the beam of the ship, and in such a manner that the 27-centimetre guns have a free range of fire for 180° from right ahead to right astern on each side of the ship. The arrangement of these two groups is clearly shown on the plans, and we will simply add that the thickness of the armour on the turrets for the 27-centimetre guns is 370 millimetres (14·5 inches), and that of the four 14-centimetre guns is 100 millimetres (4 inches). The height above the water-line of the former guns is 6·50 metres (21 feet), and of the latter 4·50 metres (14 feet 6 inches). The armoured bases of these turrets for the protection of the manœuvring machinery, and for the passage of the ammunition, extends down to the protective deck. The thickness of the armour for the turrets situated on the middle line of the ship, carrying the 30-centimetre guns, one forward and one aft, is also 370 millimetres (14·5 inches). The height of the forward guns above the water-line is 8·50 metres (27 feet 6 inches), and of the after one 6·50 metres (21 feet). The two after and forward turrets for the 14-centimetre guns have the same thickness of armour as those for the similar guns amidships, viz., 100 millimetres. The forward guns are 6·50 metres (21 feet) above the water-line, and the after ones 4·50 metres (14 feet 6 inches); the armoured bases of all the forward and after turrets extend down to the protective deck. The armour tube for the transmission of orders and manœuvring the ship also extends from the conning tower to the armoured deck, and is 150 millimetres (6 inches) in thickness.

The ship carries two military masts as shown in the plans. Each has three tops; in the upper ones are situated the electric light projectors, in the intermediate ones three 37-millimetre, and in the lower ones four 47-millimetre guns. Below the lower tops



Profile and Deck-plans of the new French first-class battle-ship "Carnot."

of each mast there is a bridge, and each of these carries two 47-millimetre guns. At the foot of the forward mast there is a chart-house and on the roof of this are installed two 45-millimetre and two 65-millimetre guns. Two other 65-millimetre guns are

placed at the foot of the after mast. Lastly, two 47-millimetre guns are arranged on each side on the upper deck amidships on platforms slightly projecting beyond the ship's side.

Now for a few words on the principal characteristics of this ship: commencing with the hull, what strikes us most is the thickness and completeness of the armour at the water-line, compared with the absence of protection for the structure above it. It is the system as we know which is preferred in the French Navy. The guns are arranged in many armoured independent groups isolated and reduced to the minimum space consistent with their working, and supported on the protective deck corresponding with the upper edge of the thick armour belt. The best utilisation of the weight of armour as regards exclusively the protection of the guns, greater facility in distributing this artillery over relatively large distances, diminished risk that a single shot might put more than one gun out of action, are the principal advantages offered by this system as compared with that of a central armoured battery and protection for the main artillery in connection with it. On the other hand, this latter system has the advantage of affording a considerable increase in the reserve of displacement and stability protected when the citadel is properly proportioned; it provides an ample protected space which would be most useful during an engagement, especially for transmission of orders and communication in case of injury to the apparatus fitted for that purpose, and for the immediate attention to the wounded; also, which is of the greatest importance, it allows of a satisfactory protection of the apertures and passages necessary for an efficient working of the propelling machinery without being obliged to limit, restrict, and group them in such a manner as to render the management of this machinery most painful and difficult at the very time when the maximum power is required to be developed by it.

The continual progress made in Q.F. artillery of medium calibres in the last few years, and which shows no signs of diminishing, and the greater efficiency of later types of armour of equal thickness which makes it possible to protect large surfaces without unduly increasing the displacement, undoubtedly tend to augment the weight of advantage inherent to the second of the above systems. The French constructors have applied this to almost its maximum development in the case of the armoured cruiser "Dupuy-de-Lôme" and the four armoured cruisers of the "Charner" type, but for large armoured battle-ships have never altogether abandoned the first system.

This system, however, far from being preserved, such as it was in the ships of the "Duperré" and "Hoche" type, etc., has suffered important additions and modifications, both as a means of providing protection for the small and medium guns, especially if throwing high-explosive shell, and as completing the protection of the vital parts below the water-line. The first of such additions we know were carried out on the "Brennus," and consists of a course of armour 12 centimetres (4.8 inches) thick above the thick armour belt at the water-line, about a metre (3 feet 3 inches) high at the centre, a little more aft, and still higher forward. It has been remarked across the Channel that many French ships, with thick armour belt at the water-line, had very little reserve of displacement and stability by reason of its limited height above the line of flotation; and from experiments on models it was concluded that, with any considerable destruction of the upper works above this belt, there would be a dangerous tendency for such ships to capsize in a slight sea. This point, raised in the heated discussion by those who defended the type of armour distribution in the English Navy, has become still more serious, as the importance of the quick-firing artillery of small and medium calibre has increased, which has given rise to the fear that the unprotected upper works would suffer considerable damage. The application of the above-mentioned supplementary belt, with the addition of a complete internal cofferdam and the sub-division of the remaining space into somewhat minute water-tight compartments, have in this respect notably increased the

safety of the ships, especially when the additional belt is capable of resisting high-explosive shell. This arrangement was maintained in the "Jauréguiberry," "Carnot," and the new battle-ships forming the "Charlemagne" type. The thickness of the belt was, however, reduced, as we have seen in the "Carnot," to 100 millimetres (4 inches), and to 75 millimetres (3 inches) in the "Charlemagne."

The second modification, originated in the "Carnot," consists in the addition of a water-tight deck below the armoured deck. It is separated from the protective deck by a space of 70 centimetres (2 feet 4 inches) at the centre, and is curved down at the sides to meet the lower edge of the thick armour-belt. This thick belt at the water-line is composed of plates of very high resistance, but it is not practically possible to make them absolutely invulnerable at all points against the fire of the most powerful artillery. A fortunate hit, therefore, from one of these heavy guns would be sufficient to penetrate and to flood one or two of the machinery compartments, since a hit on this part would open a breach directly into these compartments, not separated from the side except by some longitudinal bulkheads of practically non-resisting power; the effect would not be much inferior to that caused by the explosion of a torpedo against the hull. The addition of the above-mentioned deck, therefore, understood to have been at first designed simply to keep out splinters, has in a great measure remedied this defect, as it greatly reduces the risk of large volumes of water finding its way into the large compartments below it. It is true that these spaces have in this way been made rather less commodious, but it may be observed that in large battle-ships the immersion is generally so ample that the height of these compartments still remains sufficient, and in any case it would be worth while to modify the proportions and arrangement of the machinery to some extent, in order to obviate the risk of the ship being rendered useless by a single lucky hit.

From this point of view it does not seem possible to exaggerate the importance of this below water-deck, both for the system of independent redoubts and that of the central armoured citadel. In the ships of the "Charlemagne" type we see in fact the thickness of this deck increased to 40 millimetres (1·8 inches) and that of the armour deck above to 100 millimetres (4 inches); whilst the maximum thickness of the water-line belt has been reduced to 400 millimetres (16 inches) and of the supplementary belt above it to 75 millimetres (3 inches). There is already manifested in these changes a tendency to reduce the disproportion between the horizontal and vertical protection.

As regards her armament, the "Carnot" represents in the highest degree the independence of one gun from another. Commencing with the "Duperré" such independence was adopted for the heavy guns, each of which was either enclosed in its own turret or *en barbette* on its own platform, and were distributed in various manners along the upper deck. There always remained, however, the battery of the secondary armament, which, generally massed together and unprotected, was installed on the deck below.

In the "Brennus," a portion of the secondary armament, viz., six 16-centimetre guns, was enclosed in a citadel under the upper deck and protected by 10-centimetre (4-inch) armour; whilst the remaining guns were arranged on the upper deck, two on each side on the top of this citadel, each in a revolving armoured turret. The citadel was carried down to the protective deck, and formed the protection for supply of ammunition both for the guns in the citadel and for those above. The main artillery, on the other hand, was composed of three guns of 34 centimetres, and arranged in two turrets on the centre line of the ship, two guns in the forward turret and one in the after one.

A return was made in the "Jauréguiberry" to one turret for each of the four heavy guns which were arranged lozenge fashion at different heights, the most elevated forward, the one aft a little less, and the two centre ones on great sponsons projecting from the ship's side; the latter guns with a calibre of 27 centimetres, the two former 30 centimetres. At the same time the secondary armament

below the upper deck completely disappeared, and was reduced to eight 14-centimetre guns (the "Duperré" has fourteen, the "Magenta" seventeen), which were arranged in four revolving armoured turrets placed at the ship's side on slightly projecting platforms, two forward and two aft, in the vicinity of the turrets for the heavy guns. As compensation for the diminished number of guns in the secondary armament, the number of the smaller guns has been considerably increased and they are distributed in profusion in the tops, on the bridges, and on the upper deck structures.

The most advanced step is taken in the "Carnot" and the ships of equal or similar type, "Charles-Martel," "Masséna," and "Bouvet." The number and calibre of the secondary armament and the lozenge arrangement of the four heavy guns have been retained, whilst the eight 14-centimetre guns are each enclosed in an independent turret, and these are placed two and two alongside the four turrets of the principal guns. In this manner they form four groups of guns—the bow, the stern, and the two central broadside. To the first two is connected all the minute armament placed on the two military masts, the bridges, and the structure below them; to the second two are allocated the four remaining small guns of 47 millimetres, two to each. It would be difficult to imagine an arrangement of guns which would lend itself better than this to a convenient disposition of the ammunition magazines, and to a rapid and easy transport of ammunition with absolutely no danger of confusion at a time when the whole of the artillery is required to be used at its maximum effect. There is only one objection which we can possibly make, not so much against the arrangement in itself as against the way it has been carried out in the "Carnot," and it is this: that at sea, with a little sea on, there is a great probability that the waves would break violently against the strong projections which the central groups make in the ship's side, a defect which may be found a serious one, and which must be the cause of much inconvenience in action, and may result in a sensible diminution in the efficiency of the 27-centimetre and the four central 14-centimetre guns. We remember the long discussions held some time ago by the naval experts on the question whether the heavy guns should be maintained completely independent of each other, each in its own turret or protected platform, or whether they should be grouped in pairs. The arguments in favour of the latter arrangement on the middle line, one pair forward and one pair aft, are: saving of weight in protection with equal number of guns; larger field of fire; 270° as compared with 180° as a maximum; possibility of concentrating the whole of the fire of the heavy guns within a moderately extended section forward or aft; greater facility in arranging a sufficiently numerous secondary armament. The disadvantages are: each gun is not completely independent in direction, and there is a risk that a single hit might render half of the heavy artillery useless. It is to be noted, however, that the first of these disadvantages loses its importance in proportion as the rotation of the turrets is made more rapid and secure, and still more in those cases where the loading of the guns can be carried out at any angle of training, as, for example, in our ships of the "Re Umberto" type. To sum up, the weight of the advantages of the twin-gun system has been proved to more than balance its defects, as is shown by the fact that it has been adopted not only in the large battle-ships of the English Navy but also in the French Navy—in the most recent ships "Charlemagne" and "St. Louis."

We may complete this brief notice by remarking that, as regards the secondary artillery, the battery system completed with a few guns on the upper deck, and arranged so as to secure a sufficiently heavy fire in the line of keel forward and aft, seems now to be preferred to the turret system, and it certainly accords very well with the heavy artillery limited to the two turrets or revolving platforms. We may remark in passing that the distinction in these two systems is gradually disappearing, the guns on the platforms are being covered with shields and cupolas to such an extent that they become to all intents and purposes true

turrets. The battery guns are protected in two ways, either by enclosing each gun in an armoured fixed casemate and leaving the remaining part of the bulwarks unprotected as in the "Magnificent" type, or by casing the battery bulwarks with armour, and separating the guns from each other as far as possible by splinter bulkheads as carried out in the Italian ships of the "Re Umberto" type, and later in the cruisers of the "Garibaldi" type, the first-class ships of the "Filiberto" type, also in the "Charlemagne" type of the French Navy, and the "Kearsage" and "Kentucky" of the United States. The upper deck guns are generally protected by a revolving armour shield.

With the first system, with equal weight of armour a better protection for each battery gun can be obtained, especially when they can be placed a considerable distance apart; but on the other hand, the rest of the battery is left to be rapidly demolished by small and medium projectiles, especially if charged with high explosives; and in all probability, although the ship may be victorious in action, she would not be able for some days to continue the campaign, through an absolute want of living accommodation. With the second system, which is frequently completed by a double plating in the corresponding part of the upper deck joining to the side armour, a larger weight of armour is required, it is true, but the serious inconvenience above mentioned is avoided. This system also serves to protect in some measure the upper deck guns, since the explosion of a shell in the battery might easily cause the supports serious injury.

To conclude these few considerations suggested by an examination of the type represented by the French battle-ship "Carnot," we may add two other considerations with regard to her, and these are: the insufficiency or scarcity, in proportion to her displacement, of guns of medium calibre, the value of which in these days can in no manner be disallowed or disregarded; and, secondly, the large and vulnerable target which a ship of such high freeboard offers.—*Rivista Marittima*.

UNITED STATES.—The Navy Department's specifications for the battle-ships "Kentucky" and "Kearsage," contain a clause requiring the cofferdams of these battle-ships to be packed with American corn-pith cellulose. In an article in the *Journal of the Franklin Institute*, describing this material, Mr. Lewis Nixon says:—"We may sum up, that what appears to be the present policy of our Navy Department, is not to give vessels abnormally great metacentric heights, as they want them to be at their best when they begin fighting, and not wait until they are dangerously punished before they become good gun platforms. The best way seems to be to fix a reasonable metacentric height, and then take means to keep it. The Department's use of armour, armour decks and cellulose seems to meet this problem well. With the perfect obturation which can be obtained with the corn cellulose naval designers can settle upon the metacentric heights and other features of their designs with confidence that they can be retained in an engagement. Our cruisers of the 'Baltimore' type, if they are provided with a cellulose belt, would be warranted in engaging many of the second-class ironclads of other Powers; without it they are liable to be sunk by a well-directed machine-gun fire. This product of American farms affords a cheap and ready means of vastly increasing the efficiency of our cruisers, and the unarmoured sides of all our vessels should have these belts without delay. This discovery and application of cellulose is of as vital importance to our Navy as the development of Harveyized armour and smokeless powder. This follows from the fact that without adding very much to the cost of our vessels we can greatly increase the efficiency of them all by making their sides automatically resist the inflow of water, and as our cruisers carry heavier batteries than similar vessels of other nations, they would, when so protected, be able to give battle to ships far heavier than themselves."

The "Columbia," "New York," and "Olympia" are now protected by the cellulose made of the husks of the cocoa-nut, but that made from corn-pith is shown

to be much better, as well as one-third cheaper. Shots fired into a cofferdam packed with cocoa cellulose were followed by inflow of one-half gallon per minute, the first drop of water appearing in ten minutes and the flow gradually increasing. In the meantime the cofferdam containing the corn cellulose was fired at under similar conditions. Water was turned on as before, and left for one and one-half hours, during which time no water whatever appeared at the hole in the rear of the cofferdam, nor at the end of the time had the corn cellulose at the mouth of the hole in the rear become damp. This was with a 6-inch shot, and the same result followed penetration by an 8-inch shot. Tests were also made to show the relative non-combustibility of the materials. A portion of the material was placed loose in an iron envelope, a 3-lb. shell containing one-tenth lb. of powder was exploded in its midst. A 1-lb. bag of powder was exploded in a similar manner, in which case the cocoa cellulose ignited; the corn cellulose did not, but was greatly charred.

It was found that neither material could be washed out of a shot hole by the action of the sea and that no corrosive effect was produced by the corn cellulose, which was not the case with the cocoa cellulose.

The following return was lately made of the progress in American shipbuilding yards upon the vessels of the new fleet:—Armoured ships—"Brooklyn," 99·5 per cent.; "Iowa," 78 per cent.; "Kearsage" and "Kentucky," 11·5 per cent.; "Illinois," "Alabama," and "Wisconsin" (these being the battle-ships of the new programme), 1 per cent. each. Unarmoured—"Nashville," 88·5 per cent.; "Wilmington," 89·5; "Helena," 88·5. Gun-boats—"Vicksburg" and "Newport" (launched December 5th), 87 per cent.; No. 10, 62; No. 13, 58; Nos. 14 and 15, 64; No. 3, 74. Torpedo-boats—No. 3, 74 per cent.; No. 4, 67; No. 5, 64; No. 8, 59; submarine-boat, 60; tug No. 5, 70; torpedo-boats Nos. 6 and 7, building by the Herreshoff Company, no report.

Captain William T. Sampson, Chief of the Naval Bureau of Ordnance, in his annual report, states that no change has been made or is contemplated in the general system of gun construction, which has been in use since the reconstruction of the Navy was undertaken. Since the date of the last annual report of this bureau seventy-one guns have been completed, viz., thirty-seven 4-inch, fourteen 5-inch, seventeen 8-inch, one 10-inch, and two 12-inch. The conversion of one of the ordinary type 6-in. guns into a Q.F. gun has been completed, and the gun is now being tested at the proving grounds. The bureau expects to convert all the 6-inch guns as opportunity offers and funds become available. In the meantime the manufacture of 6-inch Q.F. guns with the Fletcher breech mechanism for battle-ships "7," "8," and "9," and for certain of the auxiliary cruisers, will be carried on. The appropriation of 250,000 dollars for a reserve supply of guns for ships of the Navy is being utilised as follows:—13-inch B.L.R., 2; 12-inch B.L.R., 2; 8-inch B.L.R., 2; 5-inch mounts, 20; 8-inch mount, 1. These, with the guns previously authorised, will supply the needs of the naval service for some time, and the only appropriation for guns estimated for during the next fiscal year (other than those required for the three battle-ships whose construction was authorised by the last naval appropriation bill) is that for additional guns necessary to arm the auxiliary cruisers. The adoption by the bureau of telescope sights for all guns except the smaller calibre of Q.F. guns has proved entirely satisfactory. The department has decided to utilise some of the reserve and auxiliary cruiser guns on old vessels of the Regular Navy. No appropriation was made by the last Congress for the new battery for the "Hartford," and an estimate therefor is again submitted. Orders were also placed for projectiles for minor calibre Q.F. guns as follows:—With the American Projectile Company, for 50,100 6-pounder shell and 5,000 3-inch shrapnel; with the American Ordnance Company, for 1,400 6-pounder shell and 5,000 3-inch shrapnel. The requirements for armour-piercing shell have been increased in severity to meet the improvements in armour. These shell must now pierce a calibre of hard-faced armour in order to be accepted.

The contract of March 1st, 1893, with the Bethlehem Iron Company has been completed, with the exception of six of the plates for the 12-inch B.L.R. turrets of the "Iowa," weighing 225 tons in all. The last of these plates will be delivered about December 1st of the present year. The contract of February 28th, 1893, with the Carnegie Steel Company has been completed, with the exception of one shutter-plate for the "Iowa," weighing 7 tons. Great activity has been displayed by the contractors in taking in hand the manufacture of the armour under the new contracts. Up to the date of this report the Carnegie Steel Company has forged sixty-five plates, rough-machined twenty-nine plates, carbonised fifty-one plates, and water-tempered two plates, all of thicknesses ranging from 4 to 15 inches. The Bethlehem Iron Company has made about the same progress. It can safely be predicted that the construction of the new battle-ships will not be delayed for want of the armour. The most important ballistic test coming under the cognisance of this bureau held since the date of the last report was that on May 14th, 1896, of the experimental 13-inch B.L.R. turret, fitted with a 15-inch curved Harveyized nickel-steel turret-plate, as a target.

The number of vessels thus far inspected and classified for use as auxiliary cruisers number nineteen on the Atlantic coast and nine on the Pacific. They will require forty-six 6-inch Q.F. guns, twenty-seven 5-inch Q.F. guns, one hundred and four 4-inch Q.F. guns, fifty-four 6-pounder Q.F. guns, eight 1-pounder Q.F. guns, one hundred and twelve machine guns. The act contemplates the conversion into auxiliary naval cruisers of steam-ships of the first, second, and third classes only, consequently batteries are not assigned to those of the fourth class. Congress at its last session appropriated the sum of 400,000 dollars toward the armament of the vessels in question, and it is earnestly recommended that a similar appropriation be made for the next fiscal year.

With reference to the frequent Press statements in regard to the disadvantage of the small-calibre rifle, it is to be noted that at the present moment no nation having any pretensions to military or naval power has in contemplation any other change in the calibre of its small-arms than a still further reduction. Further experiments to determine loss of accuracy due to excessive firing—in fact, the endurance of the 6-millimetre gun—were carried on at the proving grounds, and the barrel reduced in length to 28 inches. The rifling was so badly worn after 2,600 rounds that the flight of the bullets was very uncertain, and it is thought the limit of accuracy is near this point.

From the Naval Proving Ground, Lieutenant N. E. Mason, U.S.N., reports that "experiments to determine the character of burst of 6-inch shell, and their relative values as bursting charges, were conducted in the explosion-chamber. A shell, fitted with single wire electric primer for ignition, and proper arrangement for checking gas, and filled with 6 ozs. of dry gun-cotton, was successfully exploded. The shell broke up into twenty-seven pieces, the head being the largest piece, and weighing 26 lbs. The force of the explosion was quite severe. A 6-inch shell, loaded with 0.75 lb. of Walsrode cannon smokeless No. 32, was exploded by using single wire electric primer, with small bag of musket powder over its mouth to insure ignition. Shell burst, the break-up being fair; twelve pieces recovered, weighing 97 lbs., the largest piece, as usual, being the head. A 6-inch shell, loaded with 0.72 lb. of torpedo station smokeless shell powder, lot 1, the ignition of bursting charge being effected in the same manner as the Walsrode No. 32. Shell burst, the break-up being good as the shell with dry gun-cotton, and better than the shell with Walsrode No. 32. A 6-inch shell, loaded with 1 lb. of Joveite No. 2, was exploded in the same manner as the other shell. Shell broke up into twelve large pieces, and in two pieces; largest piece weighed 19.5 lbs., smallest 2 lbs.; head in three pieces. Dense nitrous fumes filled the explosion-chamber, preventing entrance for some time after explosion."—*Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING
FEBRUARY.

General G. Mairis, R.M.L.I., Major-General Lord Ralph D. Kerr, C.B., and Major-General K. G. Henderson, C.B., have been awarded Good Service Pensions. Colonel M. Protheroe, C.B., A.D.C., C.S.I., Indian Staff Corps, to be Assistant Military Secretary (for Indian affairs); Colonel Hon. H. G. Gough, C.B., to be Private Secretary to the Commander-in-Chief; Colonel F. W. Hemming, late 5th Dragoon Guards, to be Military Attaché in Japan; Lieut.-Colonel H. D. Hutchinson, Indian Staff Corps, to be Director of Military Education in India.

HOME.—There would appear to be something deficient in the regulations governing the theory and practice of military equitation, to necessitate the production of an unofficial book, such as that recently published by Major A. J. R. Van Cortlandt, of the 3rd Hussars, in which he gives a number of questions and answers on the theory and practice of equitation for the course of squadron training. In many respects Major Van Cortlandt's work is very useful, but it is difficult to understand his meaning on page 20 of his book:—"And, if riding on all four reins, elbows bent and lightly closed to the hips, etc." What is the meaning of "elbows bent"? Surely their position should be as when the reins are held in one hand (see page 22 Cavalry Drill). On page 28 the writer, in lieu of the old English wording "Rise in the stirrups," introduces the German term "Riding light," and proceeds to explain its supposed advantages, which ought not to be necessary were a proper detailed instruction given in our own Cavalry Drill. This seems the more evident from the fact that on page 45 of his book Major Van Cortlandt suggests that squadron officers should adopt their own methods. The instruction for "Rising in the stirrup" was well detailed by Captain R. Weir, late riding-master of the Blues, in his "Hints on Horsemanship," on page 382, *Badminton Library*, 1891. It is also to be found in the Continental cavalry drill books, where the explanations are in many cases full; they even detail the occasions upon which rising in the stirrup is to be practised. In the English Army, however, it is left to the judgment of commanding officers, though, in this country, rising in the stirrups was practised long before it was introduced in Continental Armies. It seems a pity that the details are not clearly given in our present Cavalry Drill, instead of being left open to different interpretations.

Two great improvements, certainly, have been introduced into the present Cavalry Drill, viz., on page 80, where officers are encouraged to take an interest in and be able to teach equitation; and on page 24, where rising in the stirrups makes its appearance. It is hoped that the former may induce officers to better appreciate their equitation drill, and so avoid such a display as was seen, for instance, in the officer's ride at the Royal Military Tournament of 1896, where, mainly in consequence of holding the bit reins outside, contrary to their military instruction, many of them caused their horses to refuse.

These two important points were mentioned in a work on military horsemanship, written by General Sir John Floyd as long ago as 1816. Sir John Floyd was a distinguished cavalry officer and a *protégé* of Lord Pembroke, our first writer on military equitation; and he acquired his taste for, and his education in, horsemanship in Lord Pembroke's Riding School. At the age of twelve he was gazetted a cornet in the 15th Light Dragoons, and at fifteen was riding-master of the regiment! It will be interesting to read Sir John Floyd's actual words:—"The officers themselves give the lessons to the troops they

belong to. The advantages arising from this method are found upon experiment to exceed all that could be looked for. Appearances are untoward at first, and hasty people might be tempted to abandon it in disgust, but a little perseverance brings ample reward along with it. . . . The officers become more intimately acquainted with their men and horses, their power and fitness and various qualities, the habit of giving instruction operates upon the instructor, and the officer himself becomes a better horseman. Opposite the officer in the centre of the other square may be placed an expert horseman or rough rider of a correct position on horseback, exemplifying in his person the rules laid down; for men are much disposed to imitate, often without knowing it, objects they are accustomed to look upon. . . . If it is required to trot, the rate of about six English miles an hour is a fair travelling pace. At this moderate rate, the rider should remain firm in the saddle, keeping his body tolerably back, which diminishes the jolt of the trot. If a greater rate of travelling is required, the rider must raise himself in his stirrup, to avoid the shock of the trot, as it is a relief to both man and horse; but in this movement on the stirrups the body must be tolerably erect, and the attention to the hand continued."

It is curious to find these two important points adopted in the English cavalry drill after the expiration of eighty years; but there is still room for amendment, and for some such detailed explanations as Major Van Cortlandt has endeavoured to provide in his little book. Certain people affect to undervalue the riding taught in the military schools in favour of civilian riding, but there can be no doubt that military equestration, when well understood, is the best basis for sound horsemanship. Consequently the importance of the Cavalry Drill Book being brought thoroughly up to date in every detail cannot be overestimated.

In a recent lecture Prof. C. Vernon Boys, F.R.S., described his process of photographing flying bullets by the light of the electric spark. In order to get an electric spark at the very time the bullet from the rifle was passing the photographic plate, the bullet in its passage was made to effect an electric junction of two lines of wire, thus causing the spark by the light of which the picture was taken. The lecturer demonstrated that the ordinary notion that an electric spark is instantaneous was quite erroneous, and he stated that the light of the two ends of the ordinary electric spark lasted a little less than the one-hundred-thousandth part of a second. It was, of course, instantaneous to our senses, but to tests which could measure accurately to the one-hundred-millionth part of a second the electric spark was anything but instantaneous. This spark was no good for taking the photograph of a flying bullet, as the lecturer showed by exhibiting one of his attempts, which made quite a blurred picture. He then proceeded to explain the steps which he took in order to reduce the length of time of the electric spark. To this end it was essential that the terminals should be made of copper, platinum, or some metal which did not produce readily an ignitable vapour, and the electric current must not be driven through wires at all. He used a very thick broad band of copper, not more than 2 inches long, which reached round the edge of the plate, so that the electric current had not got more than 3 or 4 inches to go altogether, and it had a very broad copper path by which it could travel. He explained by diagrams how he had effected his object, and shortened the time of the spark to about one-thirteen-millionth of a second, or about a hundred times quicker than the ordinary flash. To give the audience some idea of this infinitesimal fraction of time, he said the time occupied by the spark as reduced by his apparatus was proportionately as much less than a second as a second was less than five months, and during that time a bullet fired from a magazine rifle could not travel more than one-five-hundredth part of an inch. By his simple contrivance he was able to get a brighter and shorter spark, and all that was necessary to make a good and sharp picture. Prof. Boys exhibited a series of lantern views, showing various portraits, and, in addition, some which

had been produced by two officers of the Italian artillery, who, working upon the same lines as himself, had greatly improved upon his apparatus, and had secured some wonderful effects.

At a meeting of the Home District Military Society, held in the theatre of this Institution, on the 29th January last, the method of screening the "Concentration of an army," and "Reconnoitring an enemy," was demonstrated on the Kriegsspiel map, 6 inches to the mile. The special and general ideas, together with an account of the different stages of the manœuvre, have been printed in a pamphlet and circulated by the Inspector-General of Cavalry. The so-called "idea," or scheme, of the operations, was that a British army corps is concentrating at Woolmer to oppose the advance of an invader who has landed on the south coast, the concentration being covered by a cavalry division, of which Major-General G. Luck, C.B., the Inspector-General of Cavalry, was the commander; Colonel J. D. P. French, A.A.G., and Colonel H. S. Gough, C.M.G., A.A.G., commanding the brigades.

The division was constituted according to the intended new organisation, each of the two brigades being of three regiments, each of three squadrons of 132 sabres. With each brigade were two companies of mounted infantry, and the three machine guns of its regiments. Two batteries of horse artillery and a detachment of mounted sappers completed the combatant force of the division. The enemy existed on paper. The advance was one of thirty miles from Aldershot to the coast, and the fan-like position at the conclusion extended laterally some eighteen miles from west of Fareham to east of Chichester.

It may be assumed that the details of the forces were on the scale of the latest regulations, including machine guns, mounted infantry, and cyclist orderlies; but there is no tabular form given of the total strength, although this was verbally made clear by Major-General Luck at the meeting.

The amplitude of the orders deemed necessary by the modern developments of war-training are brought into prominence; and it is interesting to compare with these the orders by Napoleon for Jena and Austerlitz, which may be found in the great work of Matthieu Dumas.

The supply of maps in war may again prove to be a difficulty, if a cavalry reconnaissance of thirty miles requires 15 sheets of the 1-inch Ordnance Survey Map.

A salutary check was given by the skilled subordinates of Major-General Luck to the insane misuse of artillery sometimes seen at kriegsspiel exercises.

"GENERAL IDEA.

A hostile army having landed on the south coast, a concentration is taking place at Aldershot.

A complete Army-Corps with Cavalry Division having assembled by the evening of the 1st June, it is ordered to march the following morning on Woolmer, its movements being screened by the Cavalry Division.

At 10 p.m. on the 1st June, the General Officer Commanding Cavalry Division receives the following order:—

CORPS ORDER.

The General Officer Commanding, Cavalry Division.

The 1st Army-Corps marches at 6 p.m., to-morrow on Woolmer, screen the advance, and ascertain and report movements of the enemy. If necessary, concentrate and drive back hostile Cavalry.

DIVISION ORDERS, 1ST JUNE.

In compliance with 1st Army-Corps Order the Division will form up in screen formation at 3.30 a.m., to move off at 4 a.m.

Reserve brigade (Gough's) with Horse Artillery and two companies Mounted Infantry at the Cavalry Jumps, Aldershot. Head of advance guard at Cross Roads, near Hale.

Advanced brigade (French's)—Head-quarters, one regiment, one company Mounted Infantry, and detachment Royal Engineers at Farnham (North End).

Support of right advanced regiment with half company Mounted Infantry, at Bentley.

Support of left advanced regiment with half company Mounted Infantry, at Elstead.

Advanced squadrons, right regiment, at Steam Farm, and at Batt's Corner.

Advanced squadrons, left regiment, at Kettlebury Hill, and at Lea Farm.

Machine guns of advanced brigade to accompany the head-quarters of their regiments. Those of reserve brigade to follow the Artillery.

The rate of advance to be from five to six miles an hour.

The line of advance will be bounded on the west by the line, South Warnborough—Alton—East Tisted—West Meon—Warnford—Corhampton—Droxford—Wickham—Fareham. On the east by the line, Compton—Godalming—Hambleton—Chiddingfold—Gospel Green—Bexley Hill Common—Midhurst—Cocking—West Dean—Chichester.

At 4 a.m. each unit will advance to the line of the

2nd Stage.

Reserve brigade to Frensham Pond.

Advanced brigade to Headley Common.

Supports of advanced regiments to Oakwood Farm and Haslemere.

Advanced squadrons to Newton Valence, Greatham, Liphook Railway Station, and one-and-a-half miles south of Haslemere, on the road to Fernhurst.

At 5.45 a.m. the advance will be continued to the

3rd Stage.

Reserve brigade to Liphook.

Advanced brigade to Rake.

Supports of advanced regiments to Warrar Corner and Chithurst.

Advanced squadrons to Cole's Farm, Stoner Hill, Sandhill House, and Ingram's Farm.

At 7.30 a.m. the advance will be continued to the

4th Stage.

Reserve brigade to Petersfield.

Advanced brigade to north end of War Down.

Supports of advanced regiments to Chidden Down, and North Marden.

Advanced squadrons to south end of Bushey Down Racecourse, Clanfield, Compton, and Chilgrove.

On arrival at the 4th stage the horses to be watered and fed, and the men to have breakfast.

At 9.30 a.m. advance to the

5th Stage.

Reserve brigade to Chalton.

Advanced brigade to Finchdean.

Supports of advanced regiments to Walton Heath and Funtington.

Advanced squadrons to Southwick, Purbrook Heath, Westbourne, and Cross Roads near Napp Farm.

Wait for further orders before continuing the advance.

If, during the advance, concentration is ordered to repel an attempt to break through the screen, or for any other reason, units marching to the rendezvous must be careful not to block the road by which the artillery and reserve brigade are advancing. The advanced squadrons, on leaving for the rendezvous, must detach small patrols to watch all roads by which an enemy can advance. All men belonging to these patrols to be informed where the concentration is taking place.

Special Patrols.

At 2 a.m. special patrols furnished by the reserve brigade will move as follows :—

1st patrol *viâ* Farnham, Alton, Corhampton, Fareham, to Portsmouth.

2nd patrol *viâ* Farnham, Lyss, Petersfield, Havant, to Portsmouth.

3rd patrol *viâ* Chiddingfold, Midhurst, to Chichester.

4th patrol *viâ* Chiddingfold, North Chapel, Petworth, Arundel, to Littlehampton.

Each patrol will consist of a subaltern, a complete section, and two cyclists. Their messages are to be sent direct to the General Officer Commanding, who will ride at the head of the reserve brigade. On coming across the head-quarters of any squadron, the orderly carrying a message from a special patrol will, after getting a receipt, hand over the same for transmission to the General Officer Commanding. The officers with the special patrols will, of course, make use of the telegraph wires for transmission of messages so long as they are available. These messages are to be sent to one of the following stations :—Aldershot, Farnham, Frensham, Headley, Liphook, Petersfield, Chalton.

Each officer detailed for duty with the special patrols, will report himself to the Assistant Adjutant-General as soon as possible, for instruction and a copy of above Orders.

The Officer Commanding the reserve brigade will arrange for any messages arriving by wire being forwarded to the General Officer Commanding.

All messages sent in by the patrols of the advanced squadrons will be transmitted through their respective Commanding Officers.

The General Officer Commanding expects to receive, at each halting stage, information from each advanced squadron, whether of a negative character or not.

BRIGADE ORDERS, 1ST BRIGADE (FRENCH'S).

Aldershot, 1st June.

As directed in Division Orders of this date, the brigade will form the advanced brigade.

The King's Dragoon Guards, with one company Mounted Infantry, and detachment Royal Engineers, will form the support (head-quarters).

The 17th Lancers, the right advanced regiment.

The 15th Hussars, the left advanced regiment.

The boundary between the advanced regiments to be the line, Farnham—Frensham—Headley Common—Bramshot—Langley—Rake—Petersfield—Buriton—Chalton—Rowland's Castle—Havant ; to be scouted by the 17th Lancers.

Communicating posts for transmission of messages, both laterally and to the rear, will at each stage be established as follows :—

2nd stage at Bramshot, Stanford, and inn at Cross Roads on Hindhead Common.

3rd stage at Sheet Common (junction of roads), Lyss, and Rindle Wood.

4th stage at Chalton, Tagdown Hill (730), and Chalton.

5th stage at Waterloo and West Leigh House (laterally) ; Waterloo and Westbourne Common (66).

The central communicating posts to be furnished by the 15th Hussars, remainder by the King's Dragoon Guards.

Messages from the special patrols, despatched by the General Officer Commanding the division, are to be forwarded as quickly as possible direct to the General Officer Commanding. All other messages are to be sent through Commanding Officers of squadrons and regiments to the Brigadier, who will ride at the head of the supporting regiment (King's Dragoon Guards).

Each unit during the advance will be preceded by an advanced guard.

Patrols advancing by the outer boundary lines will be as strong as possible, at least half a troop.

BRIGADE ORDERS BY OFFICER COMMANDING 2ND BRIGADE (GOUGH'S).

Aldershot, 1st June.

With reference to Division Order of this date, the following will be the order of march :—

One squadron 6th Dragoon Guards as advanced guard. Head at Cross Roads near Hale.

Batteries, Royal Horse Artillery.

Machine guns.

6th Dragoon Guards.

Household Cavalry Regiment.

10th Hussars.

Mounted Infantry.

Brigade to be formed in column of regimental masses at the Cavalry Jumps, Aldershot.

The 10th Hussars will furnish half a squadron as rear guard.

The Mounted Infantry will detach half a company to either flank as flanking detachments of the brigade. These detachments will follow the lines taken by the two central advanced squadrons of the division, and will cover the entire flank of the brigade.

The advanced party of the advanced guard will pass on all messages for the General Officer Commanding, giving receipts for the same.

The cyclists of the brigade will be placed at the disposal of the Brigade-Major for carrying messages received at telegraph stations from Officers Commanding special patrols.

The special patrols ordered in Division Orders will be furnished as follows :—

1st and 2nd patrols by 6th Dragoon Guards.

3rd and 4th patrols by 10th Hussars.

ORDERS BY OFFICER COMMANDING 17TH LANCERS.

Aldershot, 1st June.

The regiment will form the right advanced regiment of the Cavalry screen, as detailed in Division and Brigade Orders.

The 3rd squadron will be in support with machine gun, and half company Mounted infantry.

The 1st squadron will form the right advanced squadron.

The 2nd squadron will form the left advanced squadron.

Boundary between squadrons the line, Binstead—Lode Farm—Empshott—Warren Corner—Froxfield—East Meon—Hyden Wood—Barn Green—Wymering ; to be scouted by the 2nd squadron.

Each of the advanced squadrons will, on arriving at Stean Farm and Batt's Corner, respectively, at once despatch as many patrols as may be necessary to cover their front, and a strong patrol of at least two sections will scout the right boundary line of the advance.

At the different stages communicating posts will be established as follows :—

2nd stage at south end of Selborne, Cross Roads (280) near Brookbridge Farm, and Cross Roads at 454.

3rd stage at Ivy House Farm, Weekgreen Farm, and Cross Roads at Church.

4th stage at north of Sheardley Farm, Hyden Farm, and east of Hermitage Farm.

5th stage at Comp House (central post only).

The 2nd squadron will furnish the central posts, the 3rd squadron the remainder.

The Officer Commanding the regiment will ride at the head of the supporting squadron.

All messages from the front, except those sent in by special patrols, will be sent by squadron commanders to the Officer Commanding the regiment.

Every officer and non-commissioned officer will either supply himself with a copy of Division, Brigade, and Regimental Orders, or such notes regarding them that he can at any time state proximately where any portion of the Division is to be found.

N.B.—The Officer Commanding the regiment will also have to arrange with the Commanding Officer of the regiment on his flank where the communicating posts for their flank squadrons will be established at each stage, and also which squadron furnishes those posts. This will also be published in his Regimental Orders.

ORDERS BY THE OFFICER COMMANDING 1ST SQUADRON, 17TH LANCERS.

Aldershot, 1st June.

On arrival at Stean Farm the left half squadron will halt. The undermentioned patrols, furnished by the 1st and 2nd troops, will proceed as follows:—

Lieutenant Graham with half his troop on the right boundary line of the division. He will scout this line and all villages, farm buildings, etc., for a mile on the left of the line including the villages of Alton, East Tisted, West Meon, Warnford, Droxford, Wickham and Fareham.

No. 2 patrol, furnished by the same troop, the line Faringdon—Newton Valence—Colemore Common—Privett—Westbury House—Peake Farm—East of Meonstoke—Soberton—Rooksbury—Watlington.

No. 3 patrol, also from the same troop, the line Cross Roads west of Jeffries' Farm—Fielder's Farm—west of Selborne—Colemore—Riplington—Old Winchester Hill—Hoe Cross—Newtown—North Boarhunt—Manor House.

No. 1 patrol, from Second Lieutenant Harvey's Troop, the line East Worldham—Selborne—Baker's Farm—Tigwell Farm—Drayton Down—Hambleton—Southwick.

No. 2 patrol, from this troop, the line Green Street—New Barn Farm—Empshott Green—Manor Farm—Ivy House Farm—Lower Bordean—Chidden—east of Hambleton—Comp House—Wymering.

The remainder of the troop the boundary line between the 1st and 2nd squadrons and all the country one mile to its right, including the villages of Empshott, Froxfield, and East Meon.

The patrols will cover a front of about a quarter of a mile, keeping touch, as far as possible, with those on their flanks, and from $1\frac{1}{2}$ miles to 2 miles in advance of the line of advanced squadrons, halting that distance in front at each of the stages named in Division Orders. During these halts the patrols will protect the line by videttes.

Rules for watering and feeding for both patrols and the support to be the same as those for pickets.

1st Patrol.

Leaves Aldershot at 2.0 a.m. and arrives at Alton 3.45. Halts at the telegraph office for 15 minutes and wires back "All clear." At 4 a.m. moves on to West Meon, arriving at 5.45 a.m., wires back "All clear." Waters and feeds. At 6.15 a.m. moves on and reaches Corhampton at 6.40, where he is informed at the telegraph office that at 6.20 telegraphic communication was interrupted with Portsmouth, wires this information back to Farnham. Moves on at 6.50; 1 mile north of Wickham is informed by an old yeoman that Wickham is in possession of a squadron of the enemy. Sends this information back by cyclist to Corhampton with instructions to wire it to Liphook and Petersfield. Moves on towards Wickham and finds that a patrol only has visited the village, and that it has moved off in an easterly direction. The men were dressed in blue with helmets and carried lances; this information is also sent back to Corhampton.

Proceeds to Portsmouth without opposition and reports his arrival there to General Officer Commanding by wire through Winchester.

2nd Patrol.

Leaves Aldershot at 2.0 a.m. and arrives at Lyss at 4.15 a.m., wires to Farnham "All clear." Leaves at 4.30 a.m. and arrives at Petersfield at 5.0 a.m., when he hears that communication with Portsmouth is interrupted beyond Chalton. Proceeds to Chalton, arriving at 6.0 a.m., where he finds the telegraph station has been destroyed by a party of the enemy, who retired after completing their work. Inhabitants say that party consisted of about 30 men dressed in blue, wearing metal helmets and carrying lances. Sends this information back by cyclist to Petersfield with orders to wire it to meet reserve brigade at Liphook. After watering and feeding leaves Chalton at 6.20 a.m., and at Finchdean meets four men of the enemy's Dragoons; pursues and kills two of them. These evidently belong to the party that visited Chalton, they have "6 D" on their appointments. After leaving Finchdean finds the road blocked by a troop of the enemy. This information is also sent to Petersfield by cyclist at 6.45 a.m.

The patrol remains in touch with the enemy, who at 7.15 a.m. moves off at a trot towards Singleton. This information is sent back by orderly to Petersfield.

3rd Patrol.

Leaves Aldershot at 2 a.m. and arrives at Chiddingfold at 4 a.m., halts for 15 minutes and wires back to Farnham "All clear." Proceeds in the direction of Midhurst, but, on arrival at Eastbourne, at 5.45 a.m., hears that Midhurst is occupied by a strong party of the enemy; sends this information by cyclist to be wired to Liphook and Headley. After watering and feeding, leaves a non-commissioned officer and one man to watch Midhurst; makes a détour with the rests of the patrol to Selham and Graffham, where he hears that a large force of Cavalry remained for the night in Eastdean. Proceeds to Court Hill, arriving at 7.15, from the summit of which he can see a large force of Cavalry on the road from Eastdean to Singleton. The force consists, evidently, of one brigade (one regiment of Hussars and one of Dragoons), but no Artillery. Can count seven squadrons in all; sends this information back both by cyclist and two mounted men, the latter to Petworth with orders to wire it back to Liphook and Petersfield, the cyclist to try and make his way *viâ* Cocking to Petersfield.

Remainder of patrol watches movements of enemy who halt at Singleton, and, at 9.15, sees two more brigades with two batteries arrives from the east and form a junction with the other brigade. This information is despatched by two mounted orderlies, who are directed to ride in the direction from which the screen is advancing, towards Petersfield.

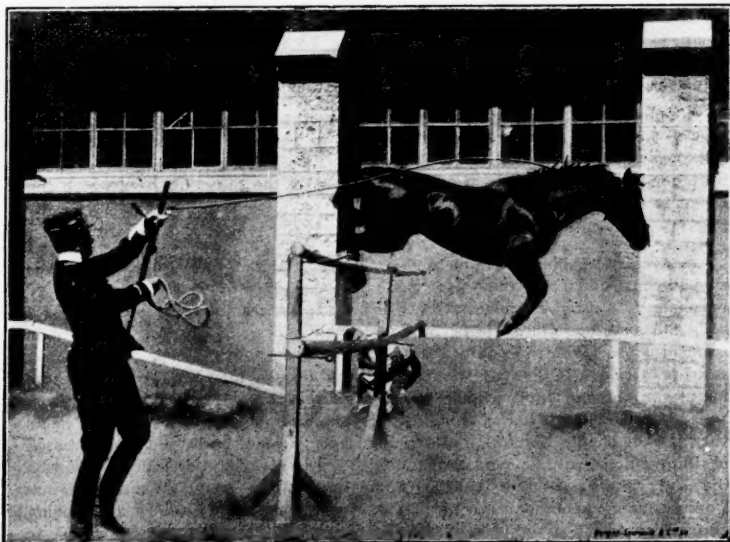
4th Patrol.

Leaves Aldershot at 2 a.m. and arrives at Chiddingfold at 4 a.m. Leaves at 4.15 a.m., passes through North Chapel at 4.45 a.m., and wires back to Farnham "All clear"; arrives at Petworth 5.30; waters and feeds. At Petworth he is informed that a large force of Cavalry have been halting for the night in Arundel Park; wires this information back to Frensham. Moves on at 6 p.m., arriving at Bury at 7 a.m., where he hears, from a mounted yeoman of the Middlesex Yeomanry, proceeding to join his corps, that the railway and telegraph lines have been destroyed at North Stoke. In Coombe Wood captures a small patrol of the enemy, consisting of an officer and two men; the men are dressed in white uniform with helmets and lances, they will give no information as to who they are; they have "17 L" on their appointments. At Coombe Wood also hears from a country gentleman (an old Yeomanry officer), that Cavalry are moving across country in a westerly direction. This information is sent by cyclist to Petworth with instructions to wire it on to Petersfield. Divides his patrol, sending a non-commissioned officer with one half towards Arundel, with the prisoners, and with the remainder strikes across country to Madehurst, arriving at 7.45 a.m., where he comes in touch with the rear guard of a Cavalry force and is pursued,

but with two men manages to get away through North Wood to Waltham Hill. From Waltham Hill (at 8.15 a.m.) he is able to see, at intervals, the enemy moving across country at a trot to Selhurst Park. The force evidently consists of two brigades, as he can make out the uniforms of four different regiments. He has also been able to count nine guns, but owing to the undulations in the ground, and the enclosed country through which the force is passing, cannot make sure of the exact number; sends this information with his two remaining men, with orders to separate and ride to meet the outer fringe of the screen. Two farmers well mounted, who have joined him, show the men a way back across country. He himself remains watching the enemy's movements and sees the force join the other brigade at Singleton at 9.15.

On arrival at Arundel Park the non-commissioned officer hears that four regiments of Cavalry and 12 guns were billeted there for the night; sends back to Pulborough to wire this information to Liphook and Petersfield, also stating in his telegram that one-half of the patrol, under the officer, are following up the two brigades.

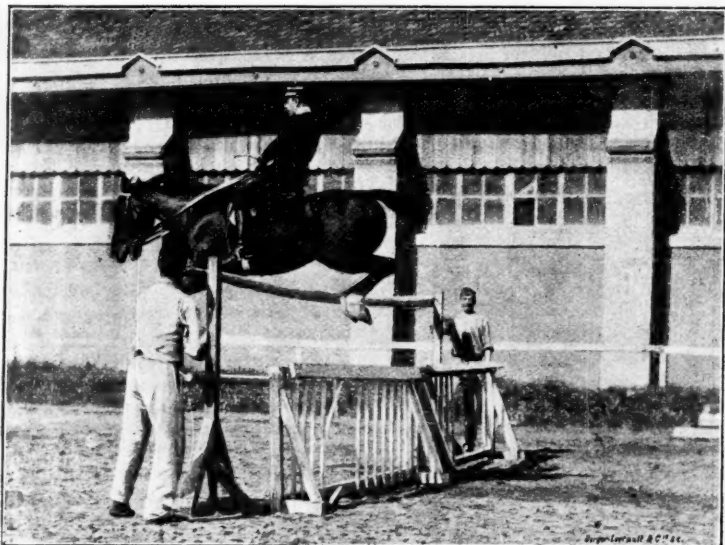
FRANCE.—The accompanying interesting illustrations of horses in motion are reproduced, by kind permission of the proprietors, from the *Revue de Cavalerie*. They are taken from instantaneous photographs, which are always interesting. They analyse, as it were, the motions of the horse, and present him in attitudes not perceptible to the naked eye. The illustrations are also instructive, in that they show what the rider ought to avoid, and in what manner he can be of assistance to the horse. The photograph of the horse "Arago" is particularly worthy of notice, on account of the peculiar dog-like attitude of the animal, while the obstacle itself is in no sense to be despised.



"MAHOMET."

(The property of Lieutenant Bérille, 19th Dragoons.)

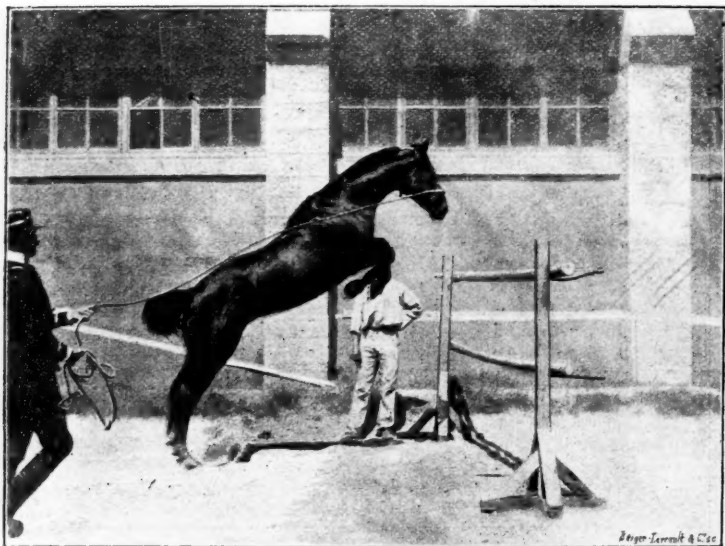
Height of Jump, 4 feet 11 inches.



"MAHOMET."

(The property of Lieutenant Bérille, 19th Dragoons.)

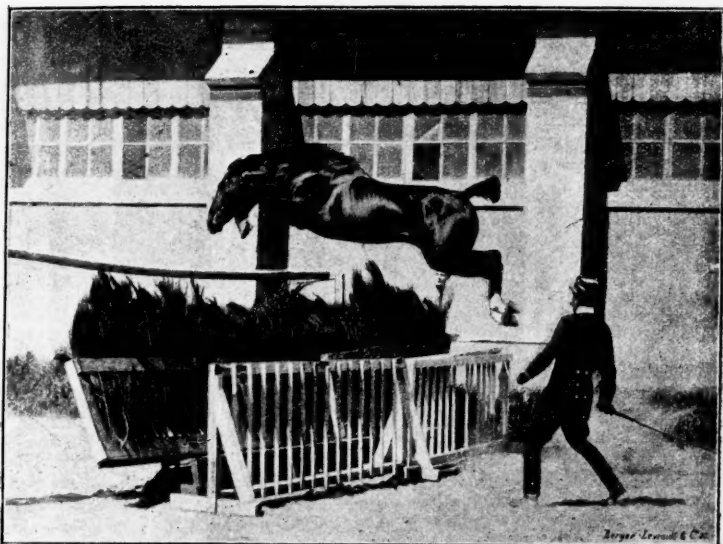
Height of Jump, 5 feet 8 inches.



"ARAGO."

(The property of Lieutenant Dutach, 19th Dragoons.)

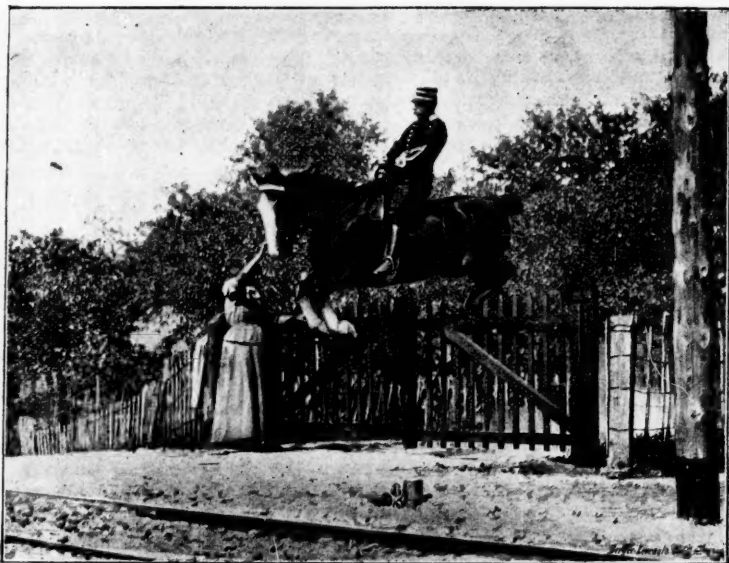
Height of Jump 5 feet, 6 inches.



"ARAGO."

(The property of Lieutenant Dutch, 1st Dragoons.)

The height of the bar is 5 feet 10 inches, but the obstacles in front represent a breadth of about 10½ feet.



"PAPILLON."

(The property of Lieutenant Dutch, 19th Dragoons.)

Height of Jump, about 5 feet.

The Autumn Manœuvres of 1897 will be organised and arranged in accordance with the general instructions issued on the 18th February. The nature and duration of the various operations to be performed will be as follows :—The 1st and 2nd Army Corps will execute army manœuvres under the direction of General de France, member of the Superior Council of War. The other army corps will execute divisional and brigade manœuvres under the conditions set forth in Chapter 3 of the instructions, thus :—The 5th, 6th, 7th, 8th, 9th, 15th and 16th Corps will carry out divisional manœuvres for 16 days or more, including march out and back. The 3rd, 4th, 10th, 11th, 12th, 13th, 14th, 17th and 18th Corps will carry out brigade manœuvres for 14 days or more, including march out and back. The divisions of the 3rd and 4th Corps stationed in Paris will not take part in these exercises. No fortress manœuvres will take place. Special instructions will be issued with regard to operations in Algiers and Tunis.

The cavalry brigades numbered 3, 4, 5, 6, 6 *bis*, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18, also the brigades of the 3rd and 7th Divisions will perform cavalry evolutions, the brigades of the 3rd and 7th Divisions doing brigade drill, for eight days, not including march out and back.

The 1st, 4th and 5th Cavalry Divisions will take part in the Grand Manœuvres, under the direction of General de France, member of the Superior Council of War; likewise the 2nd and 6th Cavalry Divisions will join in the operations of the 7th Corps under the direction of General Négrier, member of the Superior Council of War. Combined operations will be carried out with the infantry by all other cavalry brigades in their own districts. The 3rd Cuirassier Brigade of the 3rd Cavalry Division at Tours will join in the manœuvres of the 9th District; the 1st Brigade of Chasseurs at Châlons in those of the 6th District; the 13th Cuirassiers of the 7th Cavalry Division at Chartres, in those of the 4th District; the 1st Brigade of Dragoons at Fontainebleau and at Melun, in those of the 5th District; and the 3rd Brigade of Chasseurs at Dôle and at Auxerre, on those of the 8th District.

All the regiments of Reserve called out in October will manœuvre in the vicinity of their garrisons for three days at the close of their period of instruction.
—*Avenir Militaire*.

GERMANY.—The effective strength of the Army for 1897-98 will be :—23,088 officers, 78,217 non-commissioned officers and bandsmen, 479,229 privates, 2,107 surgeons, 1,078 paymasters, etc., 583 veterinaries, 1,138 gunsmiths, saddlers, etc. The effective strength in horses will be 97,850, or 500 in excess of the year 1896-97.—*Militär-Wochenblatt*.

ITALY.—The Military Estimates for the current year were drawn up under the supposition that the decrees of November, 1894, would be carried out, from which a certain saving would have resulted. But as this is not the case, and as, instead of the intended 70,000 men, 98,000 have joined the colours, the estimates have been exceeded, under the head of "Infantry," by 1,200,000 francs, and under the head of "Clothing" by 3,000,000 francs. For the enlargement of the Powder Factory of Fontana there has been an expenditure of 500,000 francs above the estimate, and for the construction of a pier at Spezia an excess of 50,000 francs. The total excess of 4,750,000 francs has subsequently been sanctioned by Parliament. The amount is deducted from that intended for the Colony of Erythrea, and the State contribution for this purpose is correspondingly increased.

The ordinary estimates for the next year comprise 229,240,000 francs, and the extraordinary, 2,010,000 francs. The remainder required to make up the 246 millions of the "consolidated budget" is granted by a special law. The amount will be employed as follows :—

| | Francs. |
|---|-----------|
| Continuing re-armament of Infantry | 9,500,000 |
| Continuing Topographical Map | 200,000 |
| Increase, Balloon and Optical Material | 600,000 |

| | |
|--|------------|
| Ammunition for Coast Batteries | 300,000 |
| Enlargement of Railway Stations and Increase of Armouries for Mobilisation | 400,000 |
| Strengthening Frontier Fortifications | 1,000,000 |
| Completion of Central School of Gunnery | 100,000 |
| Garrison Artillery and Engineer Material | 1,300,000 |
| Field Gun Construction Experiments | 500,000 |
| Rates for Cavalry Barracks at Florence | 300,000 |
| Expropriation in Rome | 450,000 |
| Completion of Pier at Spezia | 100,000 |
| Total | 14,750,000 |

—*Militär-Wochenblatt.*

RUSSIA.—The ascent of the squadron of war balloons, here described, was made last autumn after the examination of officers attached for instruction to the School of Military Ballooning at St. Petersburg, in order to test their ability to steer non-captive balloons. Three balloons ascended simultaneously, on the word of the commander of the school, at 12.30, on the 14th October. Each contained 640 cubic metres, and was filled with ordinary coal gas. There were two officers in each car. The weather was favourable, the wind north, and the velocity of the clouds about 30 versts per hour. The carrying power of the balloons was nearly alike; each had four sacks of ballast. Orders were given to ascend to a height of at least 1,000 metres. On rising, one of the balloons fouled another, but got clear, and at a height of 200 metres one of them passed so close under the car of another that the occupants of the latter had to shove off with their hands and throw out ballast so as to ascend. This critical situation lasted for about five minutes. Two of the squadron had used each three sacks of ballast on reaching a height of 1,000 metres. At a height of 1,400 to 1,600 metres, all took a southerly direction, and kept so close together that conversation could be carried on from one to another. For forty minutes after reaching the greatest altitude no ballast was thrown out, and on the latter half of the journey they parted company. At 2.11 p.m., the first balloon descended in a wood-clearing 7 versts east of Gatschina, having covered 45 versts. At 4.3, the next landed also in a wood, after a journey of 70 versts, but was for some time suspended in a tree, and had afterwards to be removed on sledges. The last of the squadron on descending was also caught in a tree, and had to be brought to the ground with the help of some peasants. The landing was effected at 4.8, after covering 60 versts. All three landed in a line at intervals of about 10 or 15 versts.

The School of Ballooning has taken a prominent part in the exhibition at Nijny Novgorod, where, in a separate pavilion, were shown a great variety of apparatus and appliances mostly invented and made in the school; also photographs of incidents in aerial navigation, photographs taken from balloons, maps, plans and reports, as well as the programme of instruction and a quantity of balloon literature in the Russian language. It is impossible to enumerate all the inventions and improvements which have been made in this field by the staff of the Balloon Park for calculating the direction of the wind and the path of balloons at different heights, their construction, filling and transport, optical apparatus, measures of security, etc. A Russian writer says:—"We must come to the conclusion that aerial navigation in Russia rests, considering present technical conditions, on a very solid and quite independent basis, in no way inferior to that in other armies. During the ten years' existence of the Balloon Detachment it has not had a single accident, and in this it differs from those of other countries. In many respects, particularly in the investigation of the atmosphere and the use of currents, the Russian Ballooning Service can claim the first position."—*Militär-Wochenblatt.*

General Grodekoff, who is well known by his ride to Herat, and now holds a command on the Amoor, describes an extraordinary march of Russian troops. He says:—"After a march of nearly one year's duration, the 4th and 8th East Siberian Battalion and the 2nd and 4th Battery of the East Siberian Artillery Brigade arrived, towards the middle of June, at their new camp in the Amoor district. They had covered a distance of over 7,000 versts, of which 4,000 were done by land and 3,000 by water. The most trying part was that between Chita Stretensk and Blagowetschensk, about 1,500 versts, when rafts were used from the middle of May to the middle of July. The weather was cold and rainy, the rivers were swollen and their current strong. To overcome these difficulties the men had to work 14 hours a day, and sometimes the length of the column was 20 versts. The losses during the whole march were only 2 officers and 4 men, who died, and 2 officers and 25 men left behind at hospitals *en route*, while the losses of battery horses amounted to 29. After their arrival I inspected the troops on three different occasions in good condition and excellent spirits. Two hundred years ago a Russian force performed a similar march, to defend Fort Albazin, in the Amoor district, against the Chinese."—*Militär-Zeitung*.

The following is an abstract of a very interesting report on the development of the Russian Artillery from 1891 to 1896, which appears in the *Mittheilungen über Gegenstände des Artillerie- und Geniewesens*, translated from the Russian *Artillery Journal* :—

Field Artillery.—The Russian artillerists have come to the conclusion, after exhaustive experiments and trials of foreign Q.F. field guns, that no pattern of such a gun has yet been found which is sufficiently satisfactory to warrant the enormous expense which its adoption would require. The matter is, however, still under investigation.

During the period referred to much *matériel* was accumulated for the batteries of field artillery and for those of the Militia and Reserve troops ; this had to be utilised for making such alterations in the existing *matériel* as to overcome the defects which had been discovered. Thus the wedge-system of breechclosing, which requires very careful manipulation of the obturator and a great many spare parts, has been replaced by the less complicated screw-system. In order to increase the rapidity of fire, to which much importance is now universally attached, an elastic buffer has been attached to the carriage, which almost entirely prevents recoil. The cheeks of the carriage are so constructed that the layer himself can train the gun accurately, and the sights have been placed more forward and to the side, so that the gun may be laid while it is being loaded. With these arrangements a field gun can be fired three or four times in a minute. The alterations in the carriage have necessitated some changes in the method of connecting it with the limber.

Exhaustive experiments with common shell showed that it is necessary that all guns should be made of an improved metal, so that there may be no fear of bursting if a shell should explode in the bore. The introduction of smokeless powder has involved changes in the cartridges. To prevent shrapnel from breaking up in the bore, and to increase the number of bullets, a steel diaphragm shell has been introduced, which is found not only to give 25 per cent. better results than the imported cast-iron shells or those of the French pattern, but also to be remarkably strong. In the district of Priamur it is difficult to move four-wheeled carriages. Two-wheeled ammunition waggons have, therefore, been made with which the ammunition columns and a portion of the light batteries are to be equipped. Experiments are going on with respect to supplying the cavalry with mitrailleuses.

Armament of Land Fortresses.—Smokeless powder is to be used with all rifled steel guns in land fortresses. It is found that two makes of this powder are suffi-

cient, whereas hitherto three makes of black powder were in use. The substitution of smokeless for black powder has resulted in a great increase in the initial velocity; in certain guns, as in the 6-inch gun of 65 pood (about 1 English ton) in weight this increase amounts to 95 metres, and in the 4·2-inch guns to 122 metres. The frame carriage for the light 9-inch mortar, and the wheeled carriage for the light 8-inch mortar, have been approved, and are being supplied in large quantities. New disappearing carriages for the 4·2-inch guns and for the 6-inch guns, weighing 120 and 190 pood (about 2 and 3 English tons respectively) have been constructed, and have given excellent results. For the 3·4-inch mortar a light wheeled carriage and a segment shrapnel shell have been made. This mortar has been approved. The automatic Maxim mitrailleuse for 3 ammunition was found to have some defects. The result was, that it was necessary to make some changes. These mitrailleuses will immediately be supplied to the land forces, to be employed chiefly in repelling assaults.

The defence of the intervals between the forts of a land fortress is provided by the light 3½-inch guns. A proportion of these guns have the fittings above described, for increasing the rapidity, and are mounted on field carriages, so that they may be quickly moved to any required part; the rest are for use at the last and most important crisis, and are in flanking casemates and on special mountings with fixed pivots, by means of which more than four rounds can be fired in a minute.

Besides these a new 6-inch gun weighing 200 pood (about 3 English tons) is to be constructed. The projectile weighs 100 lbs., and the initial velocity is 610 metres. There is also a new short 6-inch howitzer of 65 pood (1 ton), in which the projectile above mentioned will have an initial velocity of 365 metres. The gun is intended especially for distances up to 10,670 metres, and up to 2,134 against armour-plated works, and the howitzer for vertical fire with common shell.

In order to improve the 6-inch short bronze guns and the 6-inch bronze mortars, which at present form part of the armament of the land fortresses, it is proposed to put tubes of superior steel into them. By this means, moreover, with the adoption of shell and smokeless powder, it is expected that the old guns, which are at present useless for modern purposes, may be made available to perform the same work as the modern guns.

The Siege Train.—The natures, numbers, and calibres of the pieces will be altered. The following are the chief points to be attended to in the organisation of the siege trains:—1. The employment as much as possible of vertical fire both with shrapnel and common shell, the latter being expected to destroy the strongest buildings; 2. The capability of operating against fortresses at great distances, viz., up to 10,670 metres, and against armour-plated works up to 2,134 metres; 3. The greatest possible mobility; the heaviest piece of the new siege train should not, therefore, weigh more than about three English tons. Explosive projectiles will be constructed for the 8 and 9-inch light mortars, for the 8-inch light and 6-inch guns of 120 pood (a little over 1 ton) in weight, and for the 6-inch field mortar. Great difficulties were found in designing these projectiles. The new explosives are to be made in several factories, and a special laboratory is to be established for the supply of explosive projectiles and their adjuncts on a large scale. Electric lighting is also to receive great attention. Special courses of instruction for officers of fortress artillery are to be established, and all sorts of apparatus for accurate shooting, range finders, etc., etc., will be supplied to the fortresses. It is proposed to equip fortresses with bicycles for the purpose of simplifying and hastening the transmission of reports, for the connection of the central work with the outlying works, and the batteries and of the batteries between themselves and the stores.

The Armament of Coast Fortresses.—The trials of the reconstructed mountings of the 9-inch and 11-inch guns (M. 67 and M. 77) for high-angle firing were very satisfactory. The power of these guns was not formerly sufficient as against the perfected armour of the present ironclads, but with the same guns on the new

mountings explosive projectiles may be thrown on the deck of a ship, its most vulnerable part.

The new 10-inch gun, weighing twenty-three English tons, gives its 550-lb. projectile an initial velocity of 825 metres. This gun is effective with an elevation of 15° at distances over 10,670 metres, and is capable at a range of 2,134 metres of piercing a modern improved steel plate 23 inches thick. The 10-inch guns and their mountings are already being supplied on a large scale. The 6-inch "Canet" gun is after the fullest trials to be included in the armament of coast fortresses. This gun gives its 100-lb. projectiles an initial velocity of 760 metres, and has shown that it can be effective even at great armour plates of the most modern construction. Four rounds a minute can be fired with this gun against stationary objects, and two shots against those moving. A new carriage has been approved for the 11-inch mortar. It enables aimed fire to be employed, weighs 4½ tons less than the old carriage, and takes up much less room. It is to be provided for all new mortars. The investigations into the distribution of pressure on the bore of the 11-inch and 9-inch coast guns have come to an end, so that the natures of the smokeless powder to be used in these guns can be decided upon. Explosive projectiles which can be fired at high angles from the 9-inch and 10-inch coast mortars and for the 9-inch guns are also decided upon. The experiments with a mounting for the 11-inch coast gun have commenced. The object of the new mounting is to utilise the recoil to raise and lower the gun and to give it elevation and direction. A beginning has also been made with the experiments in the construction of a disappearing carriage for the 9-inch coast gun.

Conclusion.—After some remarks on the issue of the '3 rifle to the infantry, and on some changes which have been made in the organisation of the ammunition columns and the tactical working of field artillery, the writer of the report which we have summarised above concludes as follows :—

"When it is remembered that during the period referred to a new artillery instructional institution was established, that the field and fortress artillery were greatly increased (sixty new batteries were raised), that unusually enormous expenditure was incurred for the coast, fortress, and foreign artillery, that for the fortresses alone no less than 1,100 new guns of various calibres were provided, that it was necessary to supply an extraordinarily great quantity of military stores of all kinds for the field and fortress artillery which had been so suddenly augmented, and that for the preservation of these stores a whole collection of regulations is necessary; when all this is remembered, then, and only then, the full significance of the gigantic tasks performed in the last five years becomes apparent to us."

Russian Tents.—We subjoin an abstract of a description of the Russian "marching tents," which has appeared in the *Mittheilungen über Gegenstände des Artillerie- und Geniewesens* :—

Officers and men are in Russia provided with marching tents, consisting of square sheets of unbleached canvas of the best quality (of which a very minute specification is given), wooden poles, pegs, and ropes. The tents for the men consist of six sheets of canvas, each nearly 5½ English feet square, three tent poles, ten ropes, and eight pegs. The corners of the sheets are strengthened with leather pieces pierced with holes, which go through the canvas, and there are some other holes on each side of each sheet. Each tent pole is about an English inch in diameter, and is in two parts, joined together when in use by a metal socket, and its entire length is about 5 English feet. It is made usually of birch, but oak, ash, or beech may be used instead. The ropes are made of hemp, and each of them is about 9 English feet in length, ½ of an inch in diameter, and has a loop at one end. The other is wrapped round with twine. The pegs are the so-called "hook pegs," and are made of deal, or other stout wood. They are about a foot long, pointed at one end.

A complete tent is carried by six men, each having one of the sheets of canvas; every two men carry a pole in two parts and the ten ropes and eight pegs. The infantry of the line roll up their cloaks in the canvas; the guards fold up the latter and hang it to the knapsacks. In the field artillery the whole tent equipment is carried in the limber-boxes.

When the tents are to be pitched there must be an interval of eight paces between half-platoons (Halbzüge). These intervals are sufficient not only for the tents themselves but for the piled arms and for the necessary thoroughfare. Each six men pitch their tents by placing four sheets together with the edges coinciding. These four sheets are laced together with four ropes so as to form one large sheet. Three poles are then placed in the centre of the tent and their tops passed through holes in the canvas. The roof of the tent is thus raised. The remaining two sheets are folded into a triangular form and are fixed at each end of the tent. The loops of the two remaining ropes are passed over the tops of the first and third poles stretched in a line the length of the tent, and pegged down. The two halves of the roof are then stretched right and left from the centre and fastened with three pegs each. Six men can lie in such a tent. If necessary, a tent may be formed of three or five sheets, but in such a case one end of the tent must always be open. The sheets may be used as sacks for straw or as stretchers for carrying the wounded.

The officers' marching tent is with some small differences constructed in the same manner as that for the men. The canvas is, when put together, about $8\frac{1}{2}$ feet square. The roof has two thicknesses of canvas, and the openings of each end of the tent may be closed by a sheet of canvas.

TURKEY.—The winding passage which joins the Mediterranean to the Sea of Marmora is usually called the Dardanelles, but that name should be given only to the "Narrows," while the part which widens towards the Sea of Marmora should be known as the Hellespont. The length of this waterway is about 45 miles, and it is rendered difficult by a current of from 1 to $4\frac{1}{2}$ knots. The width of the Dardanelles at the narrowest part is 1,000 yards, and at the broadest part 5 miles. On both sides the shore rises to a considerable height, and spurs of the hills project into the channel, offering very favourable artillery positions. The main defence consists of three groups of forts which are situated at the entrance to the channel, and some guns are placed near Gallipoli. The entrance of the channel is about 4,000 wide, having on the northern side the fort Baler-Kelessi, a work constructed in terraces, recently rebuilt and armed with 66 pieces of Krupp ordnance, among which are 12 mortars. This fort is supported by an earthwork armed with about 16 guns. A little further north is Fort Paleocastro with 30 guns and mortars, and on the southern side of the entrance is Fort Kum Kalessi with 52 guns and mortars, some of them being of large calibre. That fort is likewise supported by an earthwork with 16 guns. After passing this fort, the straits widen and the current is less rapid, but at Key Kepis there are 44 guns, and at Fort Baikoah 20 guns on earthworks, not easy to silence. Further on, an almost uninterrupted chain of forts lines the steep banks. On the European side Fort Namasghia has 60 guns, including twelve 10-inch Krupp and some Armstrong muzzle-loaders; Kilid Bahr has 65 guns, Tscemenin 40, and Fort Degermin 13. Above them are the new works of Maita and Borghassi, with 150 guns. On the opposite side there are, near Kanak, Karleh-Sultanieh with a 50-ton Krupp gun and other works, in all 900 guns.—*Militär-Zeitung*.

NAVAL AND MILITARY CALENDAR.

FEBRUARY, 1897.

- 1st (M). News received that the Niger Company's Expedition, under Major Arnold, had completely routed the Foulahs, and captured Bida on 27th January.
- " " Bill to amend the Military Lands Act, 1892, introduced in House of Commons, and Military Works Bill passed First Reading.
- 2nd (T). France and Russia protest against the acceptance of the British loan for the Dongola Expedition.
- 4th (Th). Third-class cruiser "Mohawk" paid off at Chatham.
- 5th (F). House of Commons voted a loan to Egypt of £798,802 for the expenses of the Dongola Expedition, and £145,000 to defray the cost of the Indian troops at Suakin.
- " " Army Estimates, and Memorandum on the increase of the Army, issued.
- " " Treaty of Peace with Nupé signed.
- " " Port of Canea in Crete burned.
- 7th (S). Major J. H. Bor, R.M.A., arrived at Canea to take command of the Cretan Gendarmerie.
- 8th (M). House of Commons went into Supply on the Army Estimates.
- " " Reforms proposed by Spain in Cuba rejected by the insurgents.
- 9th (T). One hundred troopers enrolled in England for service with the Mashonaland Police.
- " " Greek flag hoisted at Halepa by the Cretan insurgents.
- 10th (W). Punitive Expedition against Benin advanced, under Rear-Admiral Rawson, from Warrigi to Siri.
- " " A Greek torpedo flotilla, under Prince George of Greece, despatched to Crete.
- 12th (F). Advance of Rear-Admiral Rawson's force which drove natives out of Ologbo, Gwato, and Sapoba.
- 14th (S). Turkish transport fired on by Greek cruiser, and prevented from landing troops at Canea.
- 15th (M). Action with the Ilorins near the Oyon river.
- " " Powers resolved on a mixed naval occupation of Canea.
- " " Greek troops under Colonel Vassos landed at Platonía.
- 16th (T). Bombardment and capture of Ilorin.
- 17th (W). News received of the repulse of a party of Cape Mounted Rifles by native rebels in Bechuanaland.
- 18th (Th). Capture of Benin City by punitive force under Rear-Admiral Rawson.
- " " 1st Bn. Gloucestershire Regiment arrived at Bombay from Alexandria, in the Transport "Victoria."
- 20th (Sat). Launch of first-class cruiser "Niobe" at the Naval Construction and Armaments Company's works, Barrow-in-Furness.
- 21st (S). News received of the destruction of the stronghold of Cheququa and other rebels in Rhodesia.
- 22nd (M). Rear-Admiral Rawson's expedition, except the Hausas, left Benin.
- 23rd (T). Third-class cruiser "Calliope" commissioned at Portsmouth.
- " " Seven days' armistice agreed to between the belligerents in Canea.
- 25th (Th). News received of the massacre of Mr. Green, the Government Resident, and some miners, by the natives at Mambare, British New Guinea.
- " " Insurrection of natives in Manila, Philippines, suppressed by the Spanish troops.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval*. Buenos Aires: January, 1897.—“Our Sea-Coast.” “Battle-ships and Modern Projectiles.” “On the Use of Steel for Guns.”

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. Nos. 3 and 4. Pola and Vienna: March and April, 1897.—“Der Krieg Österreichs in der Adria im Jahre 1866: Seekriegs-geschichtliche Studie,” verfasst von Ferdinand Ritter von Attlmayer, with four heliogravures and numerous plates, sketches, and diagrams.

FRANCE.—*Revue Maritime*. Paris: December, 1896.—“Behaviour of the Chronometers of the ‘Marceau.’” “A Practical Guide for Courts-martial” (*concluded*). “The Electric Tachymeter.” “Les Hoquets de Mer (Mist-Poufs).” “A Metal Plug for Stopping Boiler Tubes Splitting while under Steam.” “Considerations on Naval Tactics.” “Mixed Marine Boilers.” “Krupp and the Perforation of Armour Plates.” “The Sea Fisheries.”

La Marine Française. Paris: February, 1897.—“The Route to the Indies.” “The Naval Policy of France.” “The Engine-Room *Personnel* of the United States Navy.” “English Opinions on the Question of Water-tube Boilers.” “The Navy and Events in the East.” “The Franco-Brazilian Frontier Dispute.” “Political and Diplomatic Review.” “The Naval Budget.” “The Parliamentary Enquiry into the Navy.”

Le Yacht. Paris: 6th February, 1897.—“The Navies of the World.” “The Spanish Torpedo-boat Destroyers ‘Furor’ and ‘Terror.’” “Yachting Notes.” 13th February.—“Our Mediterranean Squadron.” “The Superior School of the Navy.” “Yachting Notes.” “The United States Navy” (*continued*). 20th February.—“Naval Tactics and Strategy.” “The Trials of the ‘Jauréguiberry.’” “Trials of Capped Projectiles against a Harveyized Plate.” “The United States Navy” (*continued*). 27th February.—“The Endurance of Boilers and Engines.” “The Composition of the Mediterranean Squadron.” “Yachting Notes.” “The Proposed Baltic and Black Sea Canal.”

Le Moniteur de la Flotte. Paris: 6th February, 1897.—“Some Simple Reflections.” “The Navy in Parliament.” “The Newfoundland Fishing Season of 1896.” “Colonial Notes.” 13th February.—“The Superior School and the Corvette-Captains.” “The Navy in Parliament.” “The Situation in Crete.” “The Law on the *Inscription Maritime*.” 20th February.—“The Blockade-Runners during the Cretan Insurrection, 1866-68.” “The Situation in Crete.” “The Navy in Parliament.” “Colonial Notes.” 27th February.—“M. D’Haussey and the Algerian Expedition.” “The Situation in Crete.” “The Law on the *Inscription Maritime*.”

GERMANY.—*Marine Rundschau*. Berlin: March, 1897.—“The Earlier History of the Fleet” (*continued*). “Search-lights for the Army and Navy.” “The ‘Ilitis’ Typhoon of the 22nd-25th July, 1896” (with nine charts). “The Economic Development of the German Colonies.” “The Plague in Hong-Kong.”

ITALY.—*Rivista Marittima*. Rome: February, 1897.—“Historical Studies on the Maritime Scrutiny, with a Proposal for some Improvements.” “On a Contribution to the Rational Solution of the Ballistic Problem.” “Torpedo-boat Stations and Recognition Signals.” “The Propelling Machinery of the ‘Powerful.’” “The Commercial Politics of the Italian Marine Republics.” “On a Problem of Naval Strategy.” Letters to the Director:—“The Western Coast of the Red Sea”; “A Scheme of Promotion for Naval Officers.” “Naval Notes.” “Mercantile Notes.” “Book Notices.” Plates:—The cruiser “Powerful”; the Austrian torpedo-cruiser “Magnet,” etc.

L'Osservatore Navale. Palermo: Has not been received up to time of going to press.

SPAIN.—*Revista General de Marina*. Madrid: February, 1897.—“A Problem of the Transmission of Forces.” “On the Study of Currents.” “The Invisiblity of Torpedo-boats and Electric Search-lights.” “The Protection of Medium Guns and the new Mantlets.” “Questions of Naval Strategy.” “Nansen: Three Years at the North Pole.” “The Torpedo-boat Destroyers ‘Furor’ and ‘Terror.’” “The Navies in 1896.” “The English Cruiser ‘Powerful.’” “The Naval Operations in Cuba.”

MILITARY.

AUSTRIA-HUNGARY.—*Militär-Zeitung*. Vienna: 3rd February, 1897.—“Military Service and Honours.” “French Artillery Reform.” 11th February.—“Novel Technical Experiments in the Russian Artillery.” “The Remount Question in the French Army.” 19th February.—“Students and Politics.” “The Cretan Crisis.” 27th February.—“The Army and Social Democracy.” “Duelling and the Parliament.”

Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens. Vienna: February, 1897.—“Field-Marshal Roszkowski.” “On the Gauging of Powder: a Study.” “Regulations for Practice in the Russian Heavy, Light, and Horse Batteries.” “Suction Pumps and Filters.” “Watkin's Range-finder.” “The Development of the Russian Artillery.”

Organ der Militär-wissenschaftlichen Vereine. Vienna: February, 1897.—“Chromo-Photography and Living Pictures.” “Fortress Defence.”

FRANCE.—*Revue du Cercle Militaire*. Paris: 6th February, 1897.—“History of the Madagascar Campaign.” “The Spirit of Initiative in the Army.” 13th February.—“Military Cycling.” “History of the Madagascar Campaign” (*continued*). 20th February.—“Our Alpine Chasseurs.” “History of the Madagascar Campaign” (*continued*). 27th February.—“The Regulations of the Russian Infantry Manœuvres.” “History of the Madagascar Campaign” (*continued*).

Journal des Sciences Militaires. Paris: February, 1897.—“New Remarks on the Object and Elements of Strategy.” “Fourth Battalions.” “The Employment of Artillery in the Defence of Places.” “Musketry Instruction.”

Revue d'Artillerie. Paris: February, 1897.—“The Small Arms of the English Army.” “The German Manœuvres of 1896.” “Spanish Field and Mountain Artillery Material” (*continued*). “The Artillery at the Beginning of the Wars of the Revolution” (*continued*).

Revue de Cavalerie. Paris: February, 1897.—“The German Cavalry from Sedan to Paris.” “Essay on the Practical Instruction of Cavalry Cadres” (*concluded*). “Our Hussars” (*continued*). “The Remount Question in Parliament.” “Some Peculiarities of Cossack Equitation.”

Le Spectateur Militaire. Paris: February, 1897.—“Our Grand Manœuvres, as they are and as they ought to be.” “The Colonial Army” (*concluded*). “Trochu's Plan.” “Horses and Bicycles.” “Decorations, etc.” (*continued*).

Revue Militaire de l'Étranger. Paris: February, 1897.—"The Austrian Manœuvres of 1896" (*concluded*). "The Classification of Military Employées of the German Army." "The Italians in Africa" (*concluded*).

Revue du Génie Militaire. Paris: February, 1897.—"Engineering Operations during the Madagascar Campaign" (*continued*). "Subterranean Shelter against Shells." "Alpine Barracks." "Organisation of the Engineers in England."

GERMANY. — *Militär-Wochenblatt.* Berlin: 3rd February, 1897.—"Recollections of General Count Wartensleben-Carow" (*continued*). "The Fourth Battalions in France." 6th February.—"Recollections of General Count Wartensleben-Carow" (*concluded*). "Skobelev's Report on the German Manœuvres of 1879" (*concluded*). "Reform in the Swiss Defensive Forces." "The Present Condition of the French Cavalry." 13th February.—"History of the War in Germany in 1866." "The Military Line to the Camp of Châlons." 17th February.—"Archduke Charles of Austria." "The Officers' School of Musketry in Russia." 20th February.—"Archduke Charles of Austria" (*concluded*). "New Garrison Guns in Austria-Hungary." 24th February.—"Remarks on Judging Distance." 27th February.—"Cavalry Tactics and Weapons in France." "The Increase of the Russian Artillery."

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